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SATURDAY OCTOBER 20 1945

TABLE OF CONTENTS

Indications for Surgery in Penetrating Chest Wounds G. Qvist, F.R.C.S. 521
Epidemic Diarrhoea and Vomiting G. Brown, M.B., G. J. Crawford, M.D., and Lois Stent, M.D. 524
Tick-borne Relapsing Fever R. C. Wood, M.B., and K. C. Dixon, M.B. 526
Morphine Prophylaxis of Paralytic Ileus J. T. Chesterman, F.R.C.S., and W. J. Sheehan, M.B. 528
Acid-fast Organisms in Resting Gastric Juice John Yates, M.B. 530
Massive Surgical Emphysema, Pneumothorax, Pneumoperitoneum Ronald Jones, M.D. 530
A Note on Fat Embolism H. J. Nightingale, F.R.C.S. 531
Rehabilitation of Skin Patients R. Mason Bolam, M.D. 539

MEDICAL MEMORANDA
Staph. pyogenes Septicaemia treated with Penicillin. G. I. M. Swyer, B.M. 532
Hysteria Mimicking Meningism. B. E. Finch, M.R.C.S., and N. Tronchin-James, M.R.C.S. 532

GENERAL ARTICLES AND NEWS
Public Health Training in India.....541
Medical Topics at A.S.L.I.B. 541
Wide-bore Endotracheal Connexions. H. L. Thornton, M.R.C.S. 534
Work for Handicapped Children...541
The Services.....552
Universities and Colleges.....552
Medical Notes in Parliament.....552
Medical News.....554

REVIEWS
Haematology of Childhood.....533
Biology and Human Welfare.....533
Obstetrics and Gynaecology.....533
Notes on Books.....534

LETTERS AND ANSWERS
Gymnastics for Young Children—Putrefaction of Meat, Poultry, and Game—Capillary Naevus—Vitamin B in General Therapy—Variations in Pulse Rate—Treatment of Eclampsia—Pruritus and Glycosuria—Tenderness of Muscles—Venereology—Digestive Disorders and Swallowed Sputum—Neutralizing Gastric HCl—Early Treatment of Bell's Palsy—Corrigendum 555–6

Epidemiology Section 554

LEADING ARTICLES
P and Rh.....535
Study of Food Habits.....536

ANNOTATIONS
Pathogenesis of Tuberculosis.....537
Canned Foods.....538
The Making of Scientific Instruments 538

REPORTS OF SOCIETIES
Royal Society of Medicine: Penicillin in Ophthalmology.....542

CORRESPONDENCE
R.M.B.F. Christmas Gifts. Sir Arnold Lawson, F.R.C.S. 543
Dangers of Gastroscopy. Hermon Taylor, F.R.C.S. 543
Excision of Patella. J. H. Milnes Walker, F.R.C.S. 543
Fenestration for Otosclerosis. R. Scott Stevenson, F.R.C.S.Ed. 543
Treatment of Denuded Skull Table. G. H. Colt, F.R.C.S. 544
Treatment of Duodenal Ulcer. H. M. Stanley Turner, M.D. 544

SUPPLEMENT
The Case for Private Practice. J. Campbell Young, M.B. 87
Insurance Acts Committee.....89
Heard at Headquarters.....90
A National Health Service.....91
The "Volims" Committee.....91
Batteson Testimonial Fund.....91
Correspondence.....91
H.M. Forces Appointments.....92

CORRESPONDENCE—*contd.*
Sciatic "Neuritis." Herbert H. Brown, F.R.C.S. 544
Stovaine Anaesthesia. W. B. Gabriel, F.R.C.S. 545
Mode of Action of Vitamin D. J. P. McGowan, M.D. 545
Nerve Injuries in Children. F. G. St. Clair Strange, F.R.C.S.; R. B. Zachary, F.R.C.S. 545
Longevity. A. Forster, M.B. 545
Estimation of E.S.R. at Sea. H. M. Royds Jones, M.D. 546
Medical Aspects of Prisons. R. H. Ahrenfeldt, M.R.C.S. 546
Diet in Morphine Addiction. Ellis Stungo, L.R.C.S. 547
Chin-chin! 547
Abdominal Nerve Block. F. R. W. K. Allen, M.D. 547
A Coincidence? J. C. Joyce, M.B. 548
Bitterness. Geoffrey Parker, F.R.C.S. ..548
Medical Photography. S. Watson Smith, M.D. 548
"Reasons" for Scientific Research. M. Hamilton, M.B. 549
Press Publicity. N. K. Harrison 549
Humanitarianism and the European Situation. D. F. McCarthy, M.D.; Kathleen Rutherford, M.B. 549
Alien Doctors. A. C. Lendrum, M.D.; J. Vine, M.B.; M. Tannenbaum, M.D.; H. Lytton, F.R.C.S.Ed. 549
Nutritional Macrocytic Anaemia. L. E. Glynn, M.B., H. P. Himsworth, M.D., and A. Neuberger, M.D. 550

OBITUARY
R. Cunyngham Brown, C.B.E., M.D. ...550
John Wood, M.B., D.T.M. 551
R. E. B. Yelf, M.B. 551

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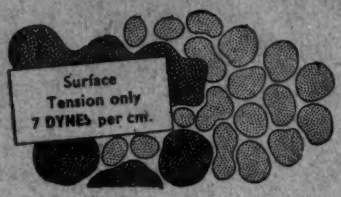

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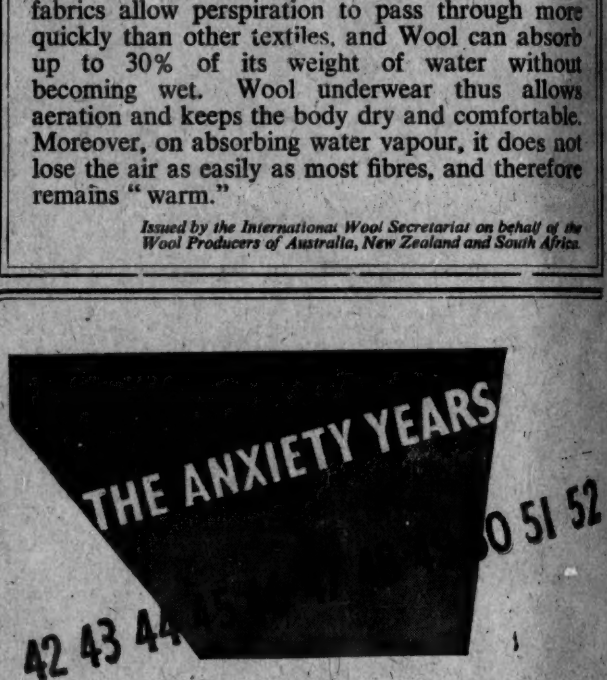

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BRITISH MEDICAL JOURNAL

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INDICATIONS FOR SURGERY IN PENETRATING WOUNDS OF THE CHEST

THE IMPORTANCE OF PULMONARY INJURY*

BY

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The most important object in treatment of injuries involving the pleura is early pulmonary re-expansion, since by this means pleural infection is limited and respiratory efficiency restored. Although this is well recognized and has been emphasized again recently (Thomas and Cleland, 1945), expansion of the lung, and in fact the pulmonary condition altogether, is usually regarded as a factor secondary in importance to the pleural lesion, and attention is focused mainly on haemothorax. It is one of the purposes of this communication to suggest that the prognosis of penetrating wounds is influenced as much by the condition of the lung as by that of the pleura.

It is a matter of experience that, on the average, expansion of the lung is slower after penetrating wounds than after non-penetrating injuries, quite apart from infection. This can be seen in a comparison of different types of haemothorax following these two varieties of chest injury, and is shown diagrammatically in Fig. 1. Thus in both haemothorax and haemopneumothorax pulmonary re-expansion is less rapid after penetrating wounds, while with total haemopneumothorax prognosis is good in the case of non-penetrating injuries; but after penetrating wounds the chances of persistent pulmonary collapse are high even in the absence of infection, and it is this type of case which calls most frequently for surgical evacuation of pleural haematoma. It is suggested that in most cases this difference is due to pulmonary injury which is not always recognized, and that treatment directed to the pleura alone therefore will not always result in re-expansion of the lung. It is significant that, with non-penetrating injuries, if there is difficulty in resolution of haemopneumothorax it is nearly always due to pulmonary injury with broncho-pleural fistula.

In addition to less favourable expansion of the lung after penetrating wounds, prognosis is worse also because of the greater risks of infection. Here again the presence of pneumothorax is an unfavourable influence and greatly increases the chances of pleural infection. The most important predisposing cause of empyema is the association of infected foreign matter and haemopneumothorax. If the lung is fully expanded, infection may not occur even in the presence of a large foreign body, and if it does it will be localized. Such cases are not uncommon, and it is to be assumed that the foreign body has entered the pleura without damage to the lung so that pneumothorax has not occurred and infection has been avoided or limited.

Elimination of the pleural space is of such significance that it is reasonable to regard early pulmonary re-expansion as even more important than avoidance of infection—first, because the former is a most useful means of promoting the latter, and, secondly, because the prognosis of localized basal empyema is much better than that of persistent total haemopneumothorax, even if this remains sterile.

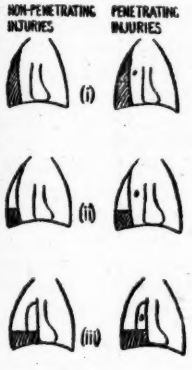

FIG. 1

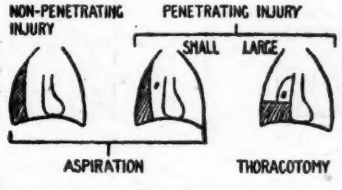

FIG. 2

FIG. 1.—(i) Haemothorax. (ii) Haemopneumothorax. (iii) Apical or total haemopneumothorax.

FIG. 2.—Treatment of chest injuries.

FIG. 3

FIG. 3.—Aspiration of large haemothorax.

With the majority of small penetrating wounds the chances of both pneumothorax and infection are small, and conservative treatment is usually justified. With large penetrating wounds, however, the amount of damage to lung and to chest wall makes both pneumothorax and infection almost inevitable, so that surgery is essential. Thus we can summarize the main principles of treatment of penetrating wounds as: (1) early elimination of pneumo- and haemo-thorax, and (2) early surgical toilet of large wounds of the lung and pleura.

There are three zones at which treatment may be necessary—forward, base, and at home. The last includes late removal of foreign bodies and treatment of chronic empyema, and will not be discussed here.

Treatment in the Forward Zone

Apart from special wounds involving the diaphragm or pericardium and primary haemorrhage, there are two groups of penetrating wounds, large and small, from the point of view of

*Paper presented at the Allied Military Surgical Conference in Paris on July 25, 1945.

treatment. The former require operation, while the latter should be included for treatment with non-penetrating injuries as *simple haemothorax* and treated by aspiration (Fig. 2).

Indications for Operation

Decision on the need for operation is often difficult, and must be made on the individual case. As a general rule, however, it can be said that if a penetrating wound is larger than about 1 cm. it will probably need operation. If there is a pneumothorax as well, the necessity for surgery is almost certain, because there is enough damage to the chest wall or to the lung, or to both, to endanger life or to render infection probable. If there is no air in the pleura the pulmonary lesion will be localized and the outlook favourable ; the best prognosis in penetrating wounds of the lung and pleura is undoubtedly in those cases in which there is an adherent pleura.

While there are numerous recognized indications for operation, such as the presence of a sucking wound, compound fracture of rib, retention of a large foreign body, or a large wound of the chest wall, these nearly all depend for their surgical importance on the existence of conditions in which pneumothorax is likely, which in practice are provided by a wound larger than about 1 cm. in the visceral or parietal pleura. If the pleural wound is smaller than this it will be blocked by haematoma or muscle, and none of these indications for operation will arise. In this type of case little is to be gained by wound excision, whereas there are operative risks such as the undesirable initiation of pneumothorax by disturbing the wound, and increase in size of haemothorax due to rise in blood pressure under anaesthesia.

If the pleural wound is larger than 1 cm. it usually means that there is also a fractured rib or sucking wound with potential or actual pneumothorax, or a large wound of the chest wall, for any of which surgery is necessary. Prognosis in such cases depends above all on the amount of pulmonary damage. It has been pointed out that open pneumothorax is often tolerated very well—as, for example, with thoracotomy under local analgesia—and that some patients from Dunkirk were alive five or six days after injury in spite of an open wound of the pleura (Barrett, 1940–1). The explanation is probably to be found in the absence of pulmonary injury : a sucking wound is much less serious if the pneumothorax is due to injury of the chest wall alone than if there is also a broncho-pleural fistula.

The size of the pulmonary wound is thus important as an immediate danger in the production of pneumothorax. In addition it is also of great influence later in the development of infection or delayed pulmonary expansion, so that adequate surgical toilet is essential for such wounds.

Indications for Aspiration

Treatment of small penetrating wounds is by aspiration of haemothorax and instillation of intrapleural penicillin. While this does not need discussion here, there are two practical points which are of importance in the forward area. These are : (*a*) Selection of the most urgent cases for immediate treatment, while others may be evacuated to the base hospital. The case with displacement of the apex of the lung requires aspiration more urgently than one with haemothorax limited to the base, because the prognosis of persistent apical haemothorax is very much worse. (*b*) Employment of the most rapid method of treatment with the minimum of apparatus. It is convenient to aspirate small effusions with a syringe and two-way tap, and large effusions by means of a blunt aspirating cannula or wide-bore needle attached to a water-seal bottle. A large A.P. refill needle is satisfactory, and the flow can be regulated at a steady drip by means of a standard blood-transfusion drip connexion (Fig. 3). The use of general anaesthesia, suction bottles, or laborious aspiration with syringe is usually not necessary. In this way the minimum of attention is required—a point of some importance to the busy C.C.S. physician—and several cases may be dealt with at the same time, the only really essential apparatus being a sufficient number of suitable needles.

Treatment at the Base

There are two conditions which call most often for treatment at this level—viz., delayed pulmonary expansion and infection.

1. Delayed Pulmonary Expansion

Expansion of the lung may be delayed by the condition of the pleura or of the lung ; the former usually receives the maximum of attention as the problem of the unresolved haemothorax ; but probably the latter, the condition of the lung itself, deserves as much care.

(i) *Unresolved Haemothorax.*—If aspiration fails to eliminate haemothorax within two weeks, surgical evacuation of the haematoma must be considered in order to avoid pleural fibrosis with an incompletely expanded lung. It is important, however, to select only the cases in which this is essential. The prognosis of persistent apical haemothorax is very much worse than that of basal haemothorax, because pulmonary efficiency is much poorer with collapse of the lung at the apex than at the base. In fact, the outlook for a sterile apical haemothorax is worse than for a basal empyema so far as final function is concerned. Hence, if the apex is well expanded there is no need for early surgical evacuation of the basal haematoma, and in fact such treatment is dangerous, because thoracotomy involves pneumothorax with the possibility of apical collapse. It is wiser to defer operation in order to ensure firm union of the pleural layers at the apex. On the other hand, if aspiration of haemothorax with collapse of the upper lobe is proving difficult, evacuation of the haematoma should be carried out as soon as possible.

(ii) *Pulmonary Contusion.*—If the lung is uninjured its re-expansion will be hindered only by the pleural contents, as in the majority of non-penetrating injuries. But if there is a pulmonary contusion or laceration, this will delay re-expansion, quite apart from the state of the pleura. It is significant that the problems of unresolved haemothorax arise almost exclusively in penetrating wounds, suggesting that it is indeed the pulmonary injury which is vital, so that "delayed pulmonary expansion" is probably a better term than "unresolved haemothorax" for this condition. Inasmuch as its extreme vascularity makes the lung very resistant to infection, it also renders the pulmonary tissue extremely liable to contusion after injury, although in comparison with the more dramatic responses of the pleura this tends to escape notice. The effect of pulmonary contusion is to cause obstruction to the air-passages and thus lead to atelectasis of lobar or lobular type. Pulmonary re-expansion will then be slow and may even be incomplete. It will be found in nearly every case of haemothorax in which the lung does not re-expand easily that there has been penetration or perforation of the pulmonary tissue by the missile. Further, in refractory apical haemothorax the injury is nearly always of the upper lobe, with the result that the apex has not re-expanded. These cases can be contrasted with the non-penetrating chest injury where without pulmonary damage (or only superficial damage) aspiration of haemo- or pneumo-thorax is almost invariably followed by rapid and complete pulmonary re-expansion. Thus it is suggested that pulmonary contusion or laceration is the main cause of slow or incomplete pulmonary re-expansion following penetrating wounds.

Pulmonary contusion due to penetrating wounds is a condition well recognized in the absence of pneumothorax. The prognosis is usually good and resolution occurs fairly rapidly. But if a pneumothorax were initiated in such a case, the condition would be very similar to that in delayed re-expansion under discussion. It is a matter of common experience in chest disease that, in the presence of partial bronchial obstruction due to any pathological process, initiation of pneumothorax will often precipitate total atelectasis, which is difficult of resolution. This is seen commonly in tuberculosis and neoplasm, while it has been shown that, in atelectasis following lobectomy, resolution occurs very much more rapidly in the absence of a pneumothorax (Sellors, Thompson, and Qvist, 1944). In a comparable way, therefore, haemorrhage into the lung after injury might be expected, owing to interference with the air-passages, to show this lethargy in re-expansion in the presence of a pneumothorax.

Looked at from another aspect, it would be very surprising if, after penetrating wounds, there were no cases intermediate between immediately fatal lacerations and small contusions of the lung. It seems much more likely that it is just these cases of refractory haemothorax which represent the badly injured

lungs that have survived but are in a state of contusion unfavourable to adequate aeration, and in point of fact the vast majority of these difficult cases of haemothorax are severe penetrating and perforating wounds of the lung. If, even with the best treatment, some lobes never re-expand completely, it is not always the treatment that must be blamed, but the original injury, in the same way as loss of function of a limb may be determined by severe injury.

There is an interesting parallel to be found between the recognition of the relative importance of pleura and lung in haemothorax following trauma and that following lobectomy. In the earlier days of lobectomy delayed pulmonary expansion was regarded as secondary to pleural changes, but in 1939 it was pointed out by Tudor Edwards that pulmonary collapse was in fact the primary lesion in such cases. It is suggested that, in penetrating wounds similarly, the pleural condition is of secondary importance, and that injury of the lung is the main cause of delayed pulmonary re-expansion.

From the above considerations it would seem that treatment should be directed to both pleura and lung. If the apex of the lung is still unexpanded after 14 days, surgical evacuation of the pleural haematoma should be carried out. The object of this is to avoid pleural fibrosis so that subsequent expansion of the lung is not impaired.

Surgical evacuation of the pleural contents alone, however, would not always be expected to result in complete pulmonary re-expansion if there is also a contusion of the lung—which has in fact been borne out by experience of the operation. Treatment must be directed to expansion of the lung, and the most promising method at present is probably by suction. This method has been described recently by Thomas and Cleland (1945), and good results reported by the use of decortication, followed by suction for three or four days, using apical and basal pleural catheters.

The value of decortication is debatable. According to Thomas and Cleland (1945) it is important to perform radical operation to mobilize the whole lung, while this is not regarded as important by Sellors (1945). It would seem that such differences of opinion might well be explained according to the stage at which operation is undertaken. If surgical evacuation of haemothorax is carried out within two or three weeks of injury decortication should not be necessary. If, after evacuation of the haematoma and adequate post-operative drainage, preferably with suction, the lung does not expand, then re-expansion would probably not have occurred even if decortication had been performed, because the cause of delayed expansion is in the lung itself after its laceration and not in fibrosis of the visceral pleura. If surgical evacuation of the haematoma is delayed more than four weeks, then decortication may have a place in treatment; but again prolonged post-operative suction drainage is probably more important, even if such extension of drainage means development of secondary empyema.

2. Infection

The rate of infection of haemothorax following penetrating and perforating wounds has been given as 21.9% (Tudor Edwards, 1943) and 33% (Nicholson and Scadding, 1944). In 400 such cases at a chest centre in the B.L.A. empyema occurred in less than 14%. Considering that these cases of haemothorax included particularly those which were not progressing well and those which were already infected, it suggests that the figures of infection usually given are inclined to be rather too high. This is very likely, since a large number of simple haemothorax cases resolve rapidly with aspiration in the general base hospitals and never find their way into chest units, so that these good results are not included in the estimate. It seems likely, then, that infection in haemothorax after penetrating wounds is not more than 14%. Apart from this apparent decrease in infection rate, there is probably also a real diminution due to the prophylactic use of penicillin and to more adequate early treatment in the forward areas both in elimination of haemopneumothorax and in surgical toilet.

The association of haemopneumothorax with infected foreign material is the most common cause of empyema, so that the two essentials in prevention are early pulmonary re-expansion and adequate surgical toilet. Penicillin therapy is of value in prophylaxis, but is second in importance to radical surgery in the elimination of potential infection. Once infection has occurred it is best to carry out drainage immediately, since penicillin therapy for infected haemothorax is rarely successful, and its continued use leads to pleural fibrosis and loculation.

Infection of the chest wall is of small importance in the absence of pleural damage. If there is a communication with the pleura, however, the condition is serious, since there is always an associated empyema and the patient suffers from toxaemia and open pneumothorax. This condition is seen most commonly with wounds of the anterior chest wall, where anatomical conditions favour infection, since the costal cartilages show poor resistance and there is often difficulty in closing a wound after adequate excision owing to lack of available muscle. There is always an associated empyema, and often contusion or atelectasis of a section of injured lung, which is usually the upper lobe corresponding to the anterior wound.

Treatment consists in the first place in prevention of sepsis by adequate excision of wounds, particularly those in the region of costal cartilages. With established sepsis and a secondary sucking wound, the first step is drainage of the empyema with temporary packing of the wound. The general condition usually improves considerably, after which secondary closure with muscle flap is carried out.

Infection of the lung is nearly always associated with empyema, and as a rule takes the form of a superficial infection with secondary sloughing into the empyema cavity. Abscess of the lung without empyema is rare, since pulmonary injury large enough to produce suppuration will also result in initial pneumothorax. Surgical treatment for pulmonary infection following injury is therefore usually incidental to the treatment of empyema, and is limited to the removal of sloughs or foreign bodies through the empyema tube.

Summary

The prognosis of penetrating wounds is worse than that of non-penetrating injuries because pulmonary re-expansion is slower and pleural infection is more likely.

Pneumothorax is of great significance in penetrating wounds and has an unfavourable influence both in the occurrence and resolution of infection and in the resolution of pulmonary contusion.

Pulmonary contusion and laceration are important causes of delayed expansion of the lung and are nearly always found in the condition of unresolved haemothorax.

Penetrating wounds of the upper lobe have the worst prognosis and are nearly always present with total or apical unresolved haemothorax.

If apical haemothorax persists for more than two weeks surgical evacuation is indicated, but this is contraindicated for basal haemothorax.

After surgical evacuation of haemothorax complete expansion of the lung may still not occur owing to residual pulmonary damage. Treatment for this condition is unsatisfactory, and the best at present is probably prolonged pleural drainage, preferably with negative pressure. Decortication is probably of value in late cases.

Infection of haemothorax following penetrating and perforating wounds occurred in less than 14% in 400 cases.

I should like to point out that most of the clinical experience on which this paper is based was obtained at a Chest Centre in the B.L.A., in which responsibility was shared with Major N. Lloyd Rusby, R.A.M.C., and Captain (Miss) Joan Cheale, R.A.M.C., to whom my thanks are due—to Major Rusby especially for the views expressed on the significance of pulmonary injury.

REFERENCES

Barrett, N. R. (1940–1). *Proc. roy. Soc. Med.*, **34**, 91.
—— (1945). *Lancet*, **1**, 103.
Edwards, A. Tudor (1939). *British Medical Journal*, **1**, 809.
—— (1943). *Lancet*, **1**, 97.
Nicholson, W. F., and Scadding, J. G. (1944). Ibid., **1**, 299.
Sellors, T. H. (1945). Ibid., **1**, 143.
—— Thompson, V. T., and Qvist, G. (1944). Ibid., **2**, 101.
Thomas, C. P., and Cleland, W. P. (1945). Ibid., **1**, 327.

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OUTBREAK OF EPIDEMIC DIARRHOEA AND VOMITING IN A GENERAL HOSPITAL AND SURROUNDING DISTRICT

BY

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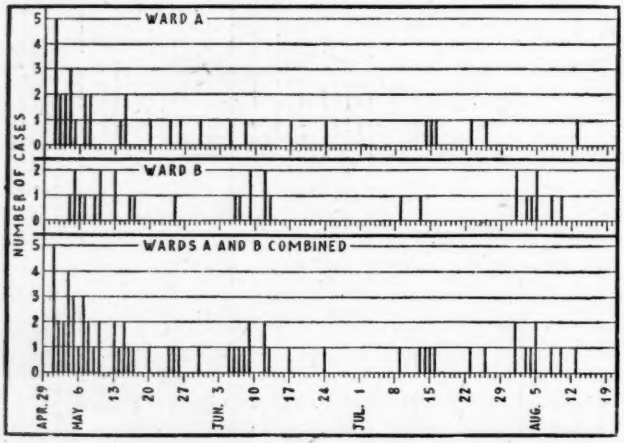
The hospital in question is a general hospital of 1,000 beds with a nursing staff of 365, and serves a compact, densely populated industrial area. Attention in the hospital was first drawn to the outbreak on May 1, 1945, when five babies in a maternity ward, whose ages ranged from 3 to 6 days, were reported to have developed diarrhoea. The maternity ward in question ("A") consists of 20 beds and 20 cots. It is the ground-floor ward of a block of three maternity wards, the second ward ("B") consisting of 22 beds and 22 cots on the first floor, and the third ward ("C") consisting of 24 beds and 24 cots directly above. These wards are separate structurally from each other, but the nursing staffs are in contact at meal-times, lecture-times, etc., and the same medical staff serves both wards. There are 10 nurses on each ward.

On inquiry it was found that two cases of diarrhoea had been admitted previously to a surgical ward as suspected acute abdominal conditions, but no trace could be discovered of any contact with the babies in Ward A, which was far distant from the surgical ward. The cleaner of Ward A had had some diarrhoea on April 13, 1945, and she would have been in the nursery as part of her normal duties, although she would have no direct contact with the babies. On May 2 the sister of Ward A and another baby developed symptoms, and on May 3 another member of the nursing staff and one of the mothers on the same ward had diarrhoea. On May 4 a third nurse, a mother, and a baby in Ward A were affected, while a baby in Ward A developed the condition. On May 5 a member of the medical staff reported an attack of diarrhoea, while a mother in Ward A and two babies in Ward B were also reported. After this initial outbreak there occurred a succession of fresh cases in both wards, involving members of the nursing staff, mothers, and babies, and in the succeeding 15 weeks a total of 7 nurses, 11 babies, and 17 mothers had been affected in Ward A, while the figures for Ward B were 3 nurses, 11 babies, and 17 mothers. During this length of time there were two intervals of 20 days and 18 days (Ward A) and two of 26 and 18 days (Ward B) during which no cases occurred (see accompanying histogram).



The total admissions to these wards over the same period were 209 mothers and 184 babies to Ward A and 135 mothers and 132 babies to Ward B. During the whole period of 15 weeks there was not a single case of diarrhoea reported in patients or staff in the third maternity ward (Ward C), adjoining the other two and bearing an exactly similar relationship in regard to nursing and medical staff.

Four patients admitted to the ante-natal ward reported symptoms which had in each case developed before admission, and one of these patients subsequently gave birth to a child who developed diarrhoea on its second day of life. Sixteen other patients were admitted to the general wards with similar symptoms, while 9 patients already in the general wards of the hospital became affected. Seventeen further cases occurred in nurses working in the general wards of the hospital, and it is possible that further members of the nursing staff may have had mild and transient symptoms which were never reported. During the fourth and fifth weeks there was an outbreak of Sonne dysentery in the hospital; 20 cases occurred in one ward, in 14 of which the diagnosis was confirmed bacteriologically.

It was soon apparent in respect of the young babies that this outbreak in no way resembled in severity a previous epidemic of neonatal diarrhoea which had occurred in the maternity wards at the beginning of the year, and which had been associated with a high mortality. Moreover, on that occasion no adults had been involved. Of the total of 111 cases in the present series, 20 adults were admitted to hospital with a history of symptoms, and the remaining 91 cases (including 27 members of the nursing staff and 22 babies) acquired the condition in the hospital. Daily visiting to the patients provided a constant contact with the outside community, and in several instances histories were available of other members of the family suffering from diarrhoea and vomiting about the same time. The possibility of infection having been brought in from outside cannot be entirely ruled out, but the fact that 65 of the cases occurred in two neighbouring wards points to a degree of local spread within the hospital, yet it should be noted that Ward C remained entirely clear. Careful inquiry failed to throw suspicion on any foodstuff, milk, or water supply as a possible source of infection.

Clinical Features

There were no noticeable prodromal signs, the onset of the condition being ushered in by diarrhoea and perhaps abdominal pains, but in a few cases there were preliminary feelings of malaise and general discomfort, not unlike the onset of an attack of influenza.

Diarrhoea was the main symptom and also the most constant, usually being the first to appear and the last to clear up. It was present in every case, and sometimes was the only material complaint. The number of stools in 24 hours varied from 4 to 22. The diarrhoea was characterized by profuse loose watery stools which were invariably negative to bacteriological examination. No blood or mucus was present, except that the babies' stools tended to become green and contain mucus. At the onset the stools of the babies were also typically watery and seemed to soak into the napkins. Abdominal pain was not constant, and was present in 45 out of 89 adults (50.5%). It varied considerably in severity, and in 5 cases was so severe that the patient was admitted as a suspected abdominal catastrophe, with a tender rigid abdomen and generalized pains. This feature was limited to patients admitted from outside, and none of the cases occurring in the hospital and coming rapidly under observation and treatment showed such severe abdominal signs. Nausea and anorexia were present in practically all the adults—the nausea being pronounced in 25 (28.1%); but vomiting was found in only 46 cases of the total of 111 (41.4%), affecting 42 adults (47.2%) and 4 infants (18.2%).

Pyrexia was present in 32 out of 89 adults (34.8%) but in none of the babies. In every such case it was under 100° F. and of brief duration, usually 24 to 36 hours. There was one exception, however—a boy aged 15 who had a sustained temperature up to 102° F. over a period of some 10 days, and who was admitted as a suspected case of peritonitis. In this particular instance there was a history of 6 other members of the family having suffered from diarrhoea and vomiting at home. It is interesting to note that out of 37 mothers affected, 24 (63.3%) had a pyrexia of brief duration which never exceeded 100° F., thus giving a higher incidence of pyrexia than any of the other groups.

Vertigo was not found, but in 10 adults (11.2%) there were severe headaches. Injection of the fauces was not a feature of any of the cases. Two cases were admitted in a state of collapse with well-marked dehydration, which responded quickly to treatment. None of the patients could be regarded as dangerously ill, although in 7 the illness was of a considerable degree of severity. The average duration of symptoms was 4.6 days, the shortest being 24 hours and the longest 14 days. With the babies they averaged 4 days, the mothers 3.1 days, members of the nursing staff 6.1 days, and cases admitted from outside, which might be regarded as the more severely affected of those occurring outside, 7.3 days. There were no relapses during the period of observation. Except for the babies in the maternity wards the age incidence varied from 1 year 3 months up to 84 years, most of the patients being in the young adult group.

In general the patients in the maternity wards—the babies and the mothers—were the least severely affected. The weight charts of the babies presented a very typical appearance, the onset of the symptoms being associated with a loss of weight which varied from 2 to 21 oz. and which averaged 13 oz. This loss of weight usually occurred during the period when the weight of the baby was climbing back to the birth weight after the customary initial fall. The appearance of a sharp fall in the rising curve was very characteristic. As soon as the symptoms cleared there was a rapid improvement and the baby very soon regained its lost ground. The condition of the babies did not give rise to anxiety at any time. As a rule, it was not necessary to retain mothers or babies in hospital longer than the normal period, and this occurred only when the symptoms appeared shortly before the usual expected date of discharge. The delay was never significant. In 8 cases the mother of an affected baby subsequently developed the condition, the average interval being 4.4 days. In only one case did the baby develop symptoms after the mother, that being the one already mentioned, in which the mother had diarrhoea and vomiting before admission to the ante-natal ward and the baby developed loose stools on its second day after birth. In 28 cases the mothers were affected while the babies remained perfectly well, and in 13 the babies were involved and the mothers remained clear. The babies were all breast-fed, but during the first few days of life were given sterile water with sterile precautions.

Treatment of the adults was on simple empirical lines—rest in bed, fluid milk diet, and a simple bismuth-and-chlorodyne mixture being given as a routine. Thirteen members of the nursing staff were also given sulphaguanidine, but there was no evidence that this affected the course of the illness in any way. Most of the symptoms cleared quickly as soon as the patient went to bed, the diarrhoea being the most persistent and lasting throughout, gradually lessening in severity. In a few instances the abdominal pains remained for several days, but were usually associated with the most persistent cases of diarrhoea.

Investigation by Questionary

Sonne and Flexner dysentery have been endemic in the surrounding area for several years, and occasionally small outbreaks have occurred in the hospital, in the day nurseries, and also in the district. These outbreaks have been easily identified bacteriologically, the numbers notified have not been large, and the general practitioners accept them as part of their usual routine. During the past few months it was noted that a large proportion of the stools sent in from practitioners were negative; some practitioners who sent in stools regularly for examination commented on this and also stated that they were having large numbers of cases attending their surgeries with an unusual type of acute diarrhoea, sometimes preceded by vomiting. The cases were so numerous that they did not attempt to have more than a fraction of them examined bacteriologically. When the hospital outbreak occurred and had been systematically investigated from the laboratory standpoint, with negative results as described above, the following questionary was sent to 20 of the principal Salford practitioners, who had been established in different parts of the city—population approximately 160,000—for at least several years before the war. Of these, sixteen replied, and their answers are summarized after each question. Extra faeces outfits were also forwarded to each practitioner, with a request to send in fresh samples of faeces from any further cases they might have.

1. Have you had an outbreak of gastro-enteritis in your practice?—Sixteen replied, "Yes."

2. Can you give any idea as to when it began?—Early 1944, 1; autumn, 1944, 3; Feb., 1945, 1; March, 1945, 1; April or early May, 1945, 9; not stated, 1.

3. When did it abate?—June, 1; July, 11; end of July, 2; not stated, 2.

Inquiries from practitioners at the time of writing—Aug. 25, 1945—show that there has been no recrudescence of the epidemic, but that sporadic cases are still occurring, sometimes in groups of two or three. Several practitioners thought there had been two or three waves of infection during April, May, and June.

4. Does this appear to be a new type of infection?—Yes, 13; cannot say, 1; unanswered, 1; had seen similar outbreak, but not so severe or lasting so long, 1.

5. General symptoms and duration of the disease.—A large majority stressed the sudden onset of profuse watery diarrhoea, sometimes with colic and often preceded by nausea and vomiting. Occasionally there was slight pyrexia, usually clearing up in 2 to 5 days but sometimes lasting 10 to 12 days. A few cases had relapses. Profuse watery diarrhoea was the outstanding symptom in nearly all cases—stools 5 to 20 a day. Two practitioners stated that they had occasional mild cases with nausea and vomiting without diarrhoea. Only one practitioner mentioned giddiness in a few cases after severe attacks.

6. Can you express any opinion as to whether this type of gastro-enteritis is different from the usual cases of bacillary dysentery which have been in evidence for some years?—Fourteen replied, "Yes": mainly on account of sudden onset, nausea and vomiting being much commoner, and also because of a profuse watery stool, occasionally with mucus but very rarely blood.

7. Age incidence.—All ages affected, 9; mainly adult, 6; not stated, 1.

8. Does it usually spread to other members of the family?—Yes, 13; very rarely, 1; usually no, 1; no, 1.

The general impression was that it occasionally spread to all members of the household, usually at intervals of 2 to 4 days, but sometimes as long as 7 days. As a rule it did not spread to all members, but picked out a portion of them. As stated above, six of the practitioners considered that adults were definitely more often affected than children. It was admitted that many of the adults who attended the surgeries came for sick notes. This may be the explanation, as affected adults would therefore be more in evidence than children.

9. Any other observations that strike you.—No respiratory symptoms mentioned. No mention of fatal cases. Most practitioners agreed that the epidemic began insidiously with sporadic cases.

The number of new cases seen by each practitioner varied from 3 to 4 a day in some practices to as many as 15 to 20 daily in others while the epidemic was at its height—mainly during May and June. Four of the practitioners who replied to the questionary had themselves been infected. Inquiries were made at the maternity and child welfare clinics, day nurseries, and school clinics for evidence of increased incidence of diarrhoea and vomiting.

The maternity and child welfare clinics reported no increase of diarrhoea and vomiting in the babies attending. The day nurseries, which are kept under careful observation for outbreaks of dysentery, also reported no increased incidence during the period of the epidemic, although a few cases occurred among the adult staff. The impression at the school clinics was that there had been a slight increase in the incidence of gastro-enteritis.

Commentary

One may gather from this inquiry that the outbreak was fairly extensive, as probably only a portion of the cases affected reported for treatment. From reports received we have good reason to believe that a similar type of diarrhoea and vomiting has been widespread over the country this spring and summer. A comprehensive field inquiry into this would be of interest. An interesting feature of the outbreak is the observation that 13 out of the 16 practitioners stressed the fact that they could not remember a similar epidemic of gastro-enteritis occurring in their practices, and considered it a new type of infection. We cannot recall a similar outbreak at the hospital or in the surrounding district during our period of residence here—over 17 years.

Epidemic nausea and vomiting occurring in an English boarding school was described by Miller and Raven (1936). They mention similar outbreaks in Denmark in 1935. Diarrhoea was not a feature in these cases. A more recent outbreak is

reported by Bradley (1943) in which some of the cases had diarrhoea as a symptom of minor importance. R. E. Smith (1938) mentions small attacks of epidemic vomiting and diarrhoea occurring at a public school; he states that cases tend to occur in the early morning, that they are of extremely short duration, and that vomiting is a more constant feature than diarrhoea.

The only description we have found of an outbreak in this country closely resembling the present one is that of A. H. D. Smith and Davies (1941) of gastro-enteritis at a large Army training centre. The disease appears to be common and widespread in the United States. Reimann *et al.* (1945) give a very full account of the disease as it occurs in America, with a comprehensive bibliography of outbreaks in other countries, and state that the transfer of infection to human volunteers by inhalation of filtered nasopharyngeal washings and faecal filtrates from patients has given encouraging results. Their clinical and epidemiological descriptions correspond closely with ours. We quote the following extracts from their paper:

"This disease affects all ages, and its mortality is *nil*. Published epidemiological and clinical descriptions are similar. Sporadic cases are noted in the community for weeks or months, and eventually large outbreaks occur. No age group is immune, but children of school age and young adults seem mostly affected. Epidemics occur at all seasons of the year, but especially in the autumn; and in different groups from 15.1 to 100% of persons are involved. Incubation period has been estimated from 30 hours to 7 days, usually two days.

"Epidemiologically the mild widespread disease with isolated cases and family and community groups involved, its apparent pandemicity, and seemingly short incubation period closely resemble the behaviour of the common cold or influenza, except for its spread over two or three months and absence of peaking. It is probably an air-borne infection, but hand-to-mouth or other means of transmission cannot be excluded, nor is it known whether it enters through the respiratory or alimentary tract."

We have little to add to this description and these conclusions concerning the disease. Examination of the stools from the hospital and practitioners for organisms and parasites and pus cells was completely negative. Stools were plated on desoxycholate citrate agar, MacConkey's agar, and in some cases on blood agar. When the hospital outbreak occurred a number of the stools which had been left in the refrigerator, and also some which were fresh the same morning, were sent to the Public Health Laboratory, Cambridge, for confirmatory examination, with negative results. Blood counts and serological tests were not done on any of the cases, nor was the vomit examined. No attempt was made to transmit the disease to volunteers.

We are unable to explain why the outbreak in the hospital was mainly confined to two maternity wards, the remaining adjacent maternity ward escaping completely. It may be argued that this was a different type of infection from the concurrent epidemic, but the identity of clinical symptoms and absence of detected infective agents in faeces, food, or water do not support this view.

Reimann states: "It is unknown at present whether or not the syndrome is related to severe epidemic diarrhoeal disease of the newborn. In most reports of the latter disease emphasis is placed on the absence of obvious infection in adults associated with the infants either before, during, or after an outbreak and on its high mortality." Similarly, in our cases the mildness of the outbreak among the newborn babies with concurrent infection among the mothers and staff definitely suggests that this is a different type of infection from the usual virulent type of neonatal diarrhoea.

The suggestion made by various authors (Reimann) that the disease is primarily an infection of the central nervous system is interesting. There were no definite nervous symptoms or sequelae in any of the hospital cases. In answer to the questionary only one practitioner mentioned giddiness as a sequel in a few of the severe cases. He suggested that this was cardiac in origin. Three others stated that mental depression after an attack was pronounced.

Summary

An outbreak of epidemic diarrhoea and vomiting of unknown origin is described.

Epidemiological data and previous published work suggest that the infection is due to a virus.

We cannot recall a similar epidemic in this area during the past 17 years.

We believe the outbreak has been widespread over the country.

A field inquiry to determine its extent would be of interest.

We wish to thank all the general practitioners who co-operated so well in supplying much of the data for this paper, also Miss Matthews, supervisor of the maternity department, for her assistance; Dr. J. L. Burn, medical officer of health for Salford, for assistance in making inquiries from the practitioners and at the various public health departments; and Dr. R. Cruickshank, pathologist, North-Western Group Laboratory, London, for valuable suggestions.

References

Bradley, W. H. (1943). *British Medical Journal*, **1**, 309.
Miller, R., and Raven, M. (1936). Ibid., **1**, 1242.
Reimann, H. A., Hodges, J. H., and Price, A. H. (1945). *J. Amer. med. Ass.*, **127**, 1.
Smith, A. H. D., and Davies, D. J. (1941). *British Medical Journal*, **1**, 554.
Smith, R. E. (1938). *Guy's Hosp. Rep.*, **88**, 150.

TICK-BORNE RELAPSING FEVER IN CYPRUS

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The occurrence of several cases of relapsing fever in rapid succession after military exercises, in which the patients had passed the night in caves or dungeons, raised the possibility of the infection being conveyed by ticks. Further cases with a similar history have since come under our care. As tick-borne relapsing fever has not previously been reported in Cyprus, the details of these cases are described below.

Site of Infection

Infection occurred in caves and dungeons situated in the north and north-east of the island, of which the following is a description:

Cave A is partially subterranean, the mouth being screened by sandbags. It accommodated three men on guard. Its walls are soft and deeply and irregularly creviced. Ticks of the species described below were found in material scraped from the walls of the cave by Major J. Clark and ourselves. Dead ticks of this same species were found in spiders' webs attached to the roof of the cave. Cases 1, 2, and 3 slept in this cave 8 to 9 days before contracting relapsing fever.

Dungeon B is situated in the interior gallery system of extensive mediaeval fortified ramparts. Its walls are of hard masonry with many deep interstices in their surface. Scrapings from its walls were superficial and no ticks could be obtained. Cases 4 and 5 and probably Case 6 slept in this dungeon a few days before contracting the disease.

Cave C is artificially constructed in the side of an eminence composed of hard clay. Ticks could not be found in this cave, but considerable alterations had taken place in its structure before it was possible to make a search. Case 7 slept in this cave some 6 weeks before diagnosed as having relapsing fever.

Cave D is very similar to Cave A. It is situated about a quarter of a mile west of Cave A. A tick of the same species was found in scrapings from the roof of Cave D. Case 8 worked in a hut, the door of which is situated 10 yards from the mouth of Cave D. Case 9 slept in the open on several occasions in this area.

Cave E is within 12 yards of a trench in which Case 10 was digging shortly before he became ill. Identical ticks were found in this cave by Major J. Clark, who has kindly shown them to us.

Cave F is similar to Caves A and D. This cave is in a very inaccessible position and no ticks could be found during the somewhat cursory search possible in the time at our disposal. Cases 11 and 12 slept in this cave 9 days before reporting sick.

Vector of Infection

The ticks found in Caves A, D, and E were all of the same species—namely, *Ornithodorus tholozani** (see Fig.). This tick is a known vector of relapsing fever in other parts of the Levant, but has not so far been described in Cyprus. There is direct evidence of Cases 1, 2, 3, 8, 9, and 10, before contracting

* These ticks have been identified as such by Prof. Adler and Major Leeson.

the disease, being associated with places infested by this tick. Cases 4, 5, 6, 7, 11, and 12 equally well give a history of having spent time in places likely to be infested by the tick, although in those places it was not possible to recover it, doubtless owing to the natural hazard of such search. No lice were found on any of the patients in this series of cases. It seems reasonable to assume that the disease was conveyed by ticks acting as an intermediate host for the spironema* and that tick-borne relapsing fever is thus harboured by this vector in Cyprus.

Ornithodorus tholozani. (×12.)

Description of Cases

Case 1.—Unit A; slept in Cave A on 4/3/42. Patient was bitten by insects during the night. Reported sick 12/3/42, suffering from headache and repeated shivering attacks. This was first thought to be the result of T.A.B. inoculation on 10/3/42. Admitted to hospital 24/3/42. Temperature 103°. No lice in clothing, but marks of insect-bites on legs. Spironema found in blood film on 24/3/42. On 25/3/42 specimens of blood and C.S.F. were obtained and 0.6 g. novostab was given intravenously. In spite of treatment he relapsed on the following dates: 16/4/42—T. 104.8°; 5/5/42—T. 103.8°; 17/5/42—T. 105°; 26/6/42—T. 101.6°. On each of these occasions spironema was found and on each 0.6 g. novostab was administered intravenously while he was pyrexial. *Clinical features :*—Severe headache. For the last six weeks of illness, apart from the acute relapses, he ran a low continuous fever (maximum 100.8° on one day) Showed icteric tinge. Eye examination, 10/4/42: nothing abnormal. *Laboratory findings:*—Thick blood films, 24/3/42, 16/4/42, 5/5/42, 17/5/42, 26/6/42: spironema seen on each occasion. Cerebrospinal fluid, 25/3/42: clear fluid, not under pressure; cells, 15 per c.mm.; protein not increased; chlorides (as NaCl), 730 mg. per 100 c.cm. Venous blood, 25/3/42 and 16/4/42: Kahn-negative. Urine, 18/5/42: Much urobilin present.

Case 2.—Unit A; slept in Cave A on 6/3/42. No knowledge of insect-bites. Reported sick on 15/3/42, suffering from headaches, backache, and shivering attacks. Admitted to hospital on 24/3/42; T. 97°. No lice in clothing, but marks of insect-bites on legs. No spironema found in blood film. On 26/3/42 temperature rose to 99° and *Spironema recurrentis* found in blood film. No fever again until 1/4/42, when temperature suddenly rose to 101.8°, and 0.6 g. novostab was administered intravenously. Was in hospital 14 days. No relapse. *Clinical features :*—Headache, backache, shivering; eye examination on 10/4/42: nothing abnormal. *Laboratory findings :*—Thick blood film, 26/3/42: *Spironema recurrentis* seen. Cerebrospinal fluid, 26/3/42: clear fluid, not under pressure; cells, 5 lymphocytes per c.mm.; protein not increased; chlorides (as NaCl), 720 mg. per 100 c.cm. Venous blood, 26/3/42: Kahn-negative. Urine not examined for urobilin.

Case 3.—Unit A; slept in Cave A on 7/3/42. Bitten by insects while sleeping, just below left eye, which was swollen next day (bite mark visible on admission to hospital). Reported sick 15/3/42, complaining of pains in limbs, shivering, and sweating. Admitted to hospital 24/3/42. Temperature on admission, 103.2°. No lice in clothing. Spironema found in blood film on 24/3/42. Specimens of blood and C.S.F. drawn on 26/3/42 and 0.6 g. of novostab given intravenously. He was in hospital 22 days and had no relapse. *Clinical features :*—Headache, shivering; no nerve palsies. Patient recovered rapidly. Temperature subnormal, and patient allowed up 3 days after admission. Eye examination, 15/4/42: Choroiditis. *Laboratory findings :*—Thick blood film, 24/3/42: Spironema seen. Cerebrospinal fluid, 26/3/42: clear, not under pressure. Cells, 7 per c.mm. (lymphs); protein not increased; chlorides (as NaCl), 680 mg. per 100 c.cm. Venous blood, 26/3/42 and 10/4/42: Kahn-negative. Urine not examined for urobilin.

Case 4.—Unit B; slept in Dungeon B on 4/3/42. No knowledge of insect-bites. Reported sick on 6/3/42; feeling of general malaise and shivering. Admitted to hospital on 8/3/42; temperature 101.9°. No lice on clothing and no marks of insect-bites on body. Apyrexial till 14/3/42, when temperature rose to 103.2°. No spironema seen in thick blood film. Apyrexial again till 17/3/42, when temperature rose to 101°. Spironema was seen in thick blood film; 0.6 g. of novostab administered intravenously while pyrexial. Apyrexial from 19/3/42 to 10/4/42, when temperature rose to 101.8°. Blood film: Spironema seen. Lumbar puncture, and 0.6 g. of novostab given intravenously. Temperature 102° on 11/4/42; normal on 12/4/42, and remained normal till 23/4/42, when patient was discharged from hospital. *Clinical features :*—Severe headaches; eyes not examined. *Laboratory findings :*—Thick blood film, 17/3/42 and 10/4/42: Spironema seen. Cerebrospinal fluid, 10/4/42: clear, not under pressure; cells, 300 per c.mm.; protein not increased; chlorides (as NaCl), 700 mg. per 100 c.cm. Venous blood—Kahn-negative. Urine not examined for urobilin.

Case 5.—Unit B; on guard in Dungeon B on 4/3/42. No knowledge of insect-bites. Reported sick 8/3/42. Admitted hospital 8/3/42; temperature 103.4°. No lice on clothing; no insect-bites on skin; no spironema seen in film. Next day temperature normal, and was apyrexial until 15/3/42, when temperature rose to 102°. No spironema seen in film. Next day temperature rose to 105°; spironema seen in film and 0.6 g. of novostab given on 17/3/42, when temperature was 105.4°. On the following day temperature 98° and remained subnormal till 14/4/42, when he was discharged from hospital fit for duty. *Clinical features :*—Severe headaches which persisted for about 1 week after treatment. Eye examination 10/4/42: nothing abnormal. *Laboratory findings :*—Thick drop blood films, 8/3/42 and 15/3/42, no spironema seen; 16/3/42, spironema seen. Cerebrospinal fluid not examined. Venous blood not examined. Urine not examined for urobilin.

Case 6.—Unit B; on guard, probably in Dungeon B. No knowledge of insect-bites; but it was extremely difficult to obtain a history from this patient. Admitted to hospital 14/1/42 with headache and fever. No lice in clothing or signs of insect-bites. Spironema found in blood film on 14/1/42, and 0.45 g. of novostab given while pyrexial. Next day was apyrexial, and remained so until discharge from hospital on 31/1/42. Readmitted to another hospital with fever on 8/2/42. Blood film sent to laboratory here on 12/2/42; spironema found. In hospital until 27/2/42, during which time he received 3 injections of novostab. Readmitted to this hospital on 10/3/42; temperature 105°. Spironema found in blood film on 11/3/42, and 0.6 g. sulphostab given intravenously while pyrexial. He was discharged from hospital on 17/4/42, and had no subsequent relapse when seen on 5/7/42. *Clinical features :*—Headache, fever. Eye examination, 10/4/42: Fundus right disk rather pale; edges very hazy, and physiological cup filled in. Fundus left disk better colour; edges more distinct, not quite normal. Conclusion—slight papillitis. *Laboratory findings :*—Thick blood films, 14/1/42, 12/2/42, and 11/3/42: Spironema seen. Cerebrospinal fluid, 17/1/42: Clear fluid, not under pressure; cells less than 5 per c.mm.; protein not increased; chlorides (as NaCl), 680 mg. per 100 c.cm. Venous blood, 17/1/42: Kahn-negative. Urine not examined for urobilin.

Case 7.—Unit C; slept in Cave C in March; no knowledge of insect-bites. Reported sick 10/5/42 with headache and fever. No lice on clothing, no marks of insect-bites. Admitted to hospital on 11/5/42; temperature rose to 100.8° and was subnormal next day, remaining subnormal till 17/5/42, when it suddenly went up to 102.6°. Blood film: No spironema seen. Temperature again normal on 18/5/42, and remained normal till 23/5/42, when it rose to 101.8°, and on 24/5/42, when it rose to 102.4°. On this latter date spironema was found in blood film, and 0.6 g. novostab was given intravenously while he was pyrexial. Temperature next day was 97° and remained subnormal till 27/5/42, when it rose to 99.2°. Apyrexial till 7/6/42, when he was discharged. *Clinical features :*—Shivering attacks, headaches, dizzy turns. Eyes not examined. *Laboratory findings :*—Thick blood films, 17/5/42 and 23/5/42, no spironema seen; 24/5/42, spironema seen. Cerebrospinal fluid not examined. Venous blood, 24/5/42: Kahn-negative. Urine, 24/5/42: urobilin present.

Case 8.—Unit D; worked beside Cave D. No knowledge of insect-bites. Admitted to hospital 10/8/42; temperature 101°. No spironema found in blood film. On 11/8/42 temperature normal. On 12/8/42 temperature 101°, and spironema found in blood film. Temperature next day normal, and remained apyrexial till 18/8/42, when it rose to 98.9°; temperature normal next day and remained so until 6/9/42, when it rose to 99.6°. Temperature normal the following day. During this time he felt ill and complained of head-

*The spironema transmitted by *O. tholozani* is described as ***S. persica.***

ache and nausea, so, although apyrexial, 0.6 g. of sulphostab was given intravenously on 13/9/42. Had no recurrence of pyrexia, and was discharged fit on 19/9/42. *Clinical features :*—Sulphostab was withheld, as it was hoped he would develop pyrexia. However, temperature did not surpass 99.6° at this time, but patient looked ill and complained of headache and nausea. Eventually, after having sulphostab, his general condition and appetite improved and headaches disappeared; he was discharged fit six days later. Eye examination on 18/9/42: Edges of both disks hazy; disks slightly swollen about 2D. No haemorrhage in retina, but not good colour. Conclusion: Bilateral papillitis. *Laboratory findings :*—Thick blood films, 10/8/42, no spironema seen; 12/8/42, spironema seen. Cerebrospinal fluid, 7/9/42: Clear—not under pressure; cells less than 5 per c.mm.; protein not increased; chlorides (as NaCl), 700 mg. per 100 c.cm. Venous blood, 12/8/42: Kahn-negative. Urine, 12/8/42: Much urobilin present—much urobilinogen.

Case 9.—Unit D; has worked in vicinity of Caves A and D. Slept in the open on several occasions while on manœuvres. No history of being bitten while sleeping in open. Admitted to hospital 10/8/42; temperature normal. No lice in clothing and no marks of insect-bites on body. Temperature rose to 102° on day of admission. Spironema seen in thick blood film; 0.6 g. of sulphostab given intravenously while pyrexial. Next evening the temperature was normal and remained normal until 19/8/42, when it suddenly rose to 102.4°. Thick blood film: No spironema seen; 0.6 g. of sulphostab given intravenously while pyrexial. Temperature normal next day and until 10/9/42, when he was discharged fit for duty. *Clinical findings :*—Pain in lumbar region, attacks of dizziness. Aching behind eyes and unable to focus clearly on print even when apyrexial. Eye examination on 5/10/42: Slight papillitis left disk. *Laboratory findings :*—Thick blood films, 10/8/42, spironema seen; 19/8/42, no spironema seen. Cerebrospinal fluid not examined. Venous blood, 10/8/42: Kahn-negative. Urine, 10/8/42: no urobilin.

Case 10.—Unit E; dug trench near Cave E. Admitted to hospital 10/8/42 complaining of headache and shivering. Temperature 103.8°. No lice on clothing or evidence of insect-bites on body. Spironema found in thick blood film on 10/8/42; 0.6 g. of sulphostab was given intravenously. Next day temperature normal, and remained normal until 25/8/42, when he was discharged from hospital. Admitted to another hospital complaining of headache and general malaise. Ran a low fever, and was transferred to this hospital on 31/8/42. Continued to run a low fever until 11/9/42, when he had a rigor and temperature rose to 101.8° and 0.6 g. sulphostab was given intravenously. Temperature fell to normal 13/9/42, and remained so. *Clinical features:*—Headache, eyeache, unable to read much because of aching behind eyes. Ran a low fever for 3 weeks. Eye examination: On 7/9/42, slight papillitis about 2D both disks; 21/9/42, left disk slightly more swollen than on 7/9/42. *Laboratory findings :*—Thick blood film, 10/8/42, spironema seen. Cerebrospinal fluid: Clear fluid not under pressure; cells, 20 per c.mm. (lymphocytes); protein not increased; chlorides (as NaCl), 740 mg. per 100 c.cm. Venous blood, 10/8/42 and 24/8/42: Kahn-negative. Urine: 10/8/42, much urobilin present: 3/10/42, urobilin present.

Case 11.—Unit F; slept in Cave F 28/9/42. No knowledge of insect-bites. Reported sick on 8/10/42, suffering from pains in head, back, and shoulders, and one severe attack of shivering. Admitted to hospital 8/10/42; temperature 103.2°. No lice on clothing or marks of insect-bites. Spironema found in blood film on day of admission. Was given 0.6 g. sulphostab intravenously while pyrexial; in 36 hours was apyrexial, and has remained so for 28 days. *Clinical features :*—Herpes of lips, headache, backache. Eye examination: Slight degree of papillitis. *Laboratory findings :*—Thick blood film, 8/10/42: Spironema seen (also seen by dark-ground examination). Cerebrospinal fluid, 11/10/42: Clear fluid not under pressure; cells less than 5 per c.mm.; protein not increased; chlorides (as NaCl), 727 mg. per 100 c.cm.; sugar, 90 mg. per 100 c.cm. Venous blood, 8/10/42: Kahn-negative. Urine, 8/10/42: much urobilin present.

Case 12.—Unit F; slept in Cave F 28/9/42. Insect-bites on left arm. Reported sick on 10/10/42 with fever. He was detained in the local M.I. Room and treated for sandfly fever. He was apyrexial on 12/10/42 and returned to duty. Admitted to hospital on 20/10/42; temperature 103.6°. No lice on clothing or marks of insect-bites. Spironema found in blood on day of admission; 0.6 g. of sulphostab was given intravenously while pyrexial. Next day was apyrexial, and has remained so for 14 days. *Clinical features:*—Headache, shivering—probably admitted to hospital during the first relapse, having been infected on the same night as Case 11. Eye examination on 24/10/42: Nothing abnormal. *Laboratory findings :*—Thick blood film, 20/10/42, very numerous spironema seen—also seen by dark-ground examination. Cerebrospinal fluid, 21/10/42: clear fluid, not under pressure; cells 4 per c.mm. (lymphocytes); protein not increased. Chlorides (as NaCl), 755 mg. per 100 c.cm. Venous blood, 20/10/42: Kahn-negative. Urine, 20/10/42: urobilin present in large amounts.

Summary and Conclusions

Ornithodorus tholozani has been found in caves in Cyprus. Soldiers sleeping in these caves have contracted relapsing fever. As this tick is a known vector of relapsing fever in other parts of the Levant it may be concluded that tick-borne relapsing fever also occurs in Cyprus. Twelve cases are described.

The incubation period of the disease varies. While usually lasting from 8 to 10 days, it appears likely that in some cases it can be as short as 2 days or as long as 5 weeks.

In 2 cases long periods of low continuous fever occurred as well as acute attacks of high pyrexia.

All cases were treated by intravenous arsenicals while pyrexial. Five of these relapsed in spite of treatment, but only two relapsed more than once.

Choroiditis was observed in one case, papillitis in 4 other cases. No other neurological complications could be discovered except for changes in the cerebrospinal fluid.

The cerebrospinal fluid in 4 cases showed a lymphocytic pleocytosis. In one case 300 cells per c.mm. were observed. In 2 cases the chloride concentration in the cerebrospinal fluid was reduced to 680 mg. per 100 c.cm.

All cases in this short series gave negative Kahn reactions.

In 7 cases the urine was examined for urobilin by Schlesinger's test. Marked urobilinuria* was observed in 6.

[More recently, one of us, K. C. D., has succeeded in infecting guinea-pigs with blood from a further case of relapsing fever contracted in Cyprus. This substantiates the view that the disease is tick-borne, since the louse-borne type is not transmissible to guinea-pigs, and that the spirochaete is *S. hispanica*, not *persica* as previously considered.]

We are very grateful to Major J. Clark, R.A.M.C., for his kind co-operation in searching the caves and for forwarding the ticks for identification; to Dr. J. G. Shelley for his careful ophthalmological examinations; and to Capt. B. T. Broadbent for photographing the specimen. We wish to thank Col. J. S. K. Boyd for his kind interest in this work.

PROPHYLAXIS OF PARALYTIC ILEUS BY ADMINISTRATION OF MORPHINE

BY

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The clinical impression has been formed in the last few years that morphine is of value in the prophylaxis of "paralytic ileus." We are unaware of any previous statistical evidence for this belief, but we regard the following analysis as of value, because the treatment was altered from a non-morphine to a morphine routine with the specific object of lessening its post-operative incidence. The accepted definition of post-operative "paralytic ileus" is the failure to pass flatus within 60 hours at the end of an operation, and Caesarean section, owing to the laxity of the abdominal wall and haemoperitoneum, is recognized as predisposing to this condition.

The data submitted for analysis consist of particulars relating to 500 consecutive patients upon whom Caesarean section was performed when under the care of Dr. W. J. Clancy in the City General Hospital, Sheffield. In the pre-morphine period the drug was given only when necessary to relieve pain, while in the second period the routine was as follows: Morphine gr. 1/4 was given 6-hourly for the first 24 hours (if the patient was asleep the injection was given on awaking, and so on 6-hourly). If distension was present the morphine was continued in the same way for a second period of 24 hours. In any case morphine gr. 1/4 was given at night for the first four nights. Fluids were limited to 3 pints a day until flatus was passed, after which the diet was rapidly increased to normal.

There were 160 Caesarean sections before the morphine routine was introduced, with 8 cases of ileus, and in the second

* This appears to be a general occurrence in relapsing fever, and is being described elsewhere.

period there were 340 Caesarean sections, with 3 cases of ileus, thus giving rates of 5% in the pre-morphine period as compared with 0.88% in the morphine period a difference of 4.12 ± 1.40, which is greater than could easily be ascribed to chance. The statistical problem, therefore, is whether it may be validly deduced that the lower rate could have resulted from the institution of morphine therapy.

The criterion of statistical significance adopted throughout the analysis is that any difference to be real—i.e., unlikely to have occurred from the play of chance—must exceed twice its standard error. It is unlikely that such will occur by chance more than five times in a hundred trials.

TABLE I.—*Annual Number of Births, Caesarean Sections, and the Occurrence of Ileus in the Two Periods*

	Births	Caesareans	Paralytic Ileus	Caesareans as % of Births	Ileus as % of Caesareans
Non-morphine period:					
1935	1,027	21	0	2·04	0
1936	1,186	22	1	1·85	4·5
1937	1,276	39	1	3·06	2·6
1938	1,219	46	4	3·77	8·7
1939 (to Aug.) ..	1,003	32	2	3·19	6·3
Total	5,711	160	8	2·80	5·0
Morphine period:					
1939 (Sept. to end)	519	11	0	2·12	0
1940	1,549	37	0	2·39	0
1941	1,066	55	1	5·16	1·8
1942	1,304	46	1	3·53	2·2
1943	1,568	76	1	4·85	1·3
1944	1,936	73	0	3·77	0
1945 (to July 1) ..	919	42	0	4·57	0
Total	8,861	340	3	3·84	0·88

It may be noted that the number of births in the second period is 50% higher than in the first, but this is hardly relevant to the problem, and it also should be noted that the proportion of Caesarean sections to births has increased from 2.80 to 3.84% (difference 1.04±0.31%)—outside the probability of chance, owing to the increasing percentage of complicated cases admitted.

The following information was supplied with regard to each case: (1) Date of operation and hospital number. (2) Age of patient. (3) Parity. (4) Type of operation—classical, repeat classical, lower segment, repeat lower segment. (Some slight errors may be involved here, as cases of repeat section were labelled according to the time under discussion, for in some instances it was impossible to ascertain which operation had been performed previously.) (5) Indication—mechanical, haemorrhage, toxic, or cardiac.

TABLE II.—*Age Distribution*

	Under 25	25–	30–	35–	40+	Total
Pre-morphine ..	46	52	43	17	2	160
Morphine	43	77	82	94	44	340
Total ..	89	129	125	111	46	500

$\chi^2 = 50{\cdot}5$. $n' = 4$. $P < 0{\cdot}01$.

It is clear that the age groups are not similar, there being an excess of patients over 35 in the second group, which is not readily accountable to chance and is undoubtedly due to the increased age of confinement found after the conscription of women.

TABLE III.—*Parity*

	1	2	3	4+	Total
Pre-morphine ..	99 (4)	40 (3)	10	11 (1)	160
Morphine	172 (1)	101 (1)	25 (1)	42	340
Total ..	271 (5)	141 (4)	35 (1)	53 (1)	500

$\chi^2 = 6{\cdot}99$. $n' = 3$. $P > 0{\cdot}05 < 0{\cdot}10$.

No difference greater than could be ascribed to chance is found between the two series as regards parity. The figures in parenthesis indicate the distribution of ileus cases, and it seems clear that parity may be exonerated as a factor relevant to ileus.

TABLE IV.—*Type of Operation*

	Classical	Repeat Classical	Lower Segment	Repeat Lower Segment	Total
Pre-morphine ..	67 (3)	28 (1)	62 (4)	3	160
Morphine ..	131 (1)	59 (1)	134 (4)	16	340
Total ..	198 (4)	87 (2)	196 (5)	19	500

$\chi^2 = 2{\cdot}53$. $n' = 3$. $P > 0{\cdot}30 < 0{\cdot}50$.

Here again the distribution of the two series by type of section is not dissimilar, nor does paralytic ileus (figures in parenthesis) seem to be particularly associated with any one type.

TABLE V.—*Indication*

	Mechanical	Haemorrhage	Toxic or Cardiac	Total
Pre-morphine ..	148	10	2	160
Morphine ..	270	49	21	340
Total ..	418	59	23	500

$\chi^2 = 14{\cdot}2$. $n' = 2$. $P < 0{\cdot}01$.

In the morphine period the indication was other than mechanical to a greater degree than in the pre-morphine period, this in all probability being due to the increased age of the group.

The tabulations above suggested that both age and indications warranted more detailed analysis, as follows:

TABLE VI

Indication	Age					
	Under 25	25–	30–	35–	40+	Total
	Pre-morphine period					
Mechanical ..	46 (3)	47 (2)	40 (2)	13	2	148
Haemorrhage ..		5	2	3		10
Toxic			1	1 (1)		2
Total ..	46 (3)	52 (2)	43 (2)	17 (1)	2	160
	Morphine period					
Mechanical ..	33	65	69 (1)	72 (2)	31	270
Haemorrhage ..	8	9	11	14	7	49
Toxic	2	1	1	8	6	18
Cardiac		2	1			3
Total ..	43	77	82 (1)	94 (2)	44	340

It will be seen that with one exception all the cases of "paralytic ileus" (figures in parenthesis) occurred where the indication was mechanical. But even among these cases the incidence of ileus was lowered in the morphine period from 4.7 to 1.1% (difference 3.6 ± 1.56, which is significant).

The difference in age of the two groups can also be said to have little to do with the results, though here the numbers are too small for statistical proof. In the second, or morphine, series the ileus cases occurred in the older age groups, while in the earlier series they occurred in the younger groups.

Using two age groups only, then on the basis of the ileus rates experienced among the mechanical indications in the pre-morphine period we should expect (as shown in Table VII) 11.6 cases to occur in the morphine period. Actually only 3 occurred.

TABLE VII.—*Mechanical Indications Only*

Age Group	Pre-morphine			Morphine		
	Caesareans	Ileus	Rate	Caesareans	Expected Ileus	Actual
Under 30 ..	93	5	5·37	98	5·3	0
30+ ..	55	2	3·64	172	6·3	3
					11·6	3

$$\frac{\text{Difference}}{\sqrt{\text{Expected}}} = \frac{8{\cdot}6}{3{\cdot}4} = 2{\cdot}52$$

Taking the square root of the expected number as an approximation to the standard error of the difference, the

ratio of the difference to its standard error exceeds 2, and the decrease in the second period may therefore be regarded as a real one.

Discussion

The objective of the analysis was to ascertain whether or not the two series of patients were similar in all respects except as regards treatment and to make allowances for differences which might be found. The results show similarity in regard to parity and type of operation, but dissimilarity in regard to age and indication. While the conclusion must be that the "paralytic ileus" rate was lowered after morphine therapy started, the statistical analysis can only be claimed to show that the decrease was greater than could easily be ascribed to chance and that it was not due to inherent differences in the two series as regards age, parity, and type of operation or indication.

Conclusion

The essential difference between the two series of cases from the clinical point of view is the introduction of a morphine routine in the second group, and we feel that the results (5% paralytic ileus as against 0.88%) are attributable to this factor, as the two series are as near parallel as can be expected in 500 consecutive Caesarean sections.

We wish to express our indebtedness and thanks to Dr. E. Lewis-Faning, of the Medical Research Council's Statistical Staff, for the statistical analysis and comments, without which this paper could not have been written. We also thank Dr. W. J. Clancy for his help and co-operation in this subject for some years past, and Dr. J. Rennie and Dr. J. Clark for permission to publish this article.

ACID-FAST ORGANISMS IN GASTRIC RESTING JUICE

BY

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This investigation was undertaken after a physician had remarked that he occasionally had acid-fast organisms reported in the gastric juice of patients when he was certain that the tubercle bacillus was not present in the patient's sputum.

The Investigation

Technique.—The specimens of gastric resting juice were obtained from out-patients attending Guy's Hospital for fractional test meals. None of them were known or suspected to be suffering from tuberculosis. Each specimen was treated with antiformin, and smears were made and stained by the Ziehl-Neelsen method, decolorization being carried out with both 25% sulphuric acid and 90% alcohol. The smears were each subjected to a ten-minute microscopical search for acid-fast bacilli. When these were found the neutralized and washed centrifugalized deposit was planted on Loewenstein's medium and incubated at 37° C. for at least six weeks, and a portion of the deposit was also injected into a guinea-pig.

Findings.—171 specimens were examined. In seven of them acid-fast organisms were seen. None of the seven showed more than two or three such organisms per slide in a prolonged search. They were mostly of a short and stout shape, unlike true tubercle bacilli, and often had a ragged deformed appearance. On culture three of the seven specimens gave a growth of saprophytic acid-fast organisms which grew equally well at room temperature and failed to produce tuberculous lesions in a guinea-pig. All seven specimens on guinea-pig inoculation had failed to produce any lesions when the animal was killed seven weeks later. The fractional test meal carried out on these seven cases at the same time that the resting juice was obtained showed in two cases hyperchlorhydria, in one case hypochlorhydria, and the remaining four gave a normal result. Control investigations carried out on three patients suffering from open tuberculosis (two children and one adult) showed typical tubercle bacilli present in large or moderate numbers in the resting juice.

Conclusion

In 4.6% of resting-juice specimens examined acid-fast organisms were present. These organisms were also alcohol-fast. As pointed out by Van Diense and Hooghiemster (1938) alcohol resistance of an acid-fast organism is not sufficient to identify it conclusively as the tubercle bacillus. In this case they proved to be saprophytes, ingested very possibly with fruit and vegetables, on which they are commonly found.

It appears, from the cases investigated, that under normal conditions the chance of tubercle bacilli being found in the gastric resting juice of non-tuberculous patients is very remote.

Since the examination of gastric washings for the tubercle bacillus is a valuable diagnostic proceeding it should be noted that mere films where acid-fast bacilli are few and possibly deformed in appearance may perhaps be misleading without further investigation.

REFERENCE

Van Diense, F., and Hooghiemster, E. (1938). *C. r. Soc. Biol.*, Paris, **129**, 384.

MASSIVE SURGICAL EMPHYSEMA, PNEUMOTHORAX, AND PNEUMOPERITONEUM

BY

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Massive surgical emphysema developing suddenly during or after intubation of the tracheo-bronchial tract raises problems, including those of prevention and treatment, as shown in the cases described herewith.

Case I

A married woman aged 58 was admitted to hospital on Aug. 15, 1944, for bronchoscopy, as bronchial growth had been suspected. Premedication was by morphine 1/6 gr. and atropine 1/100 gr. General anaesthesia was induced by pentothal. The bronchoscopic examination (Aug. 18) was conducted uneventfully by Mr. K. W. Mackenzie, and no abnormality was found. A few moments after the bronchoscope had been removed the right eyelid was noted to be swollen. Very quickly this swelling spread to the face and neck. She became deeply cyanosed and respiration ceased. A needle was inserted into the anterior mediastinum above the suprasternal notch, but no air escaped. A laryngoscope was introduced into the throat, and the pharynx was found to be occluded by swollen spongy mucous membrane. The bronchoscope was then reintroduced, with difficulty. The trachea was found to be occluded by grossly swollen mucous membrane. After further manipulation the bronchoscope was introduced as far as the bifurcation of the trachea. The right main bronchus was occluded, but there was a very small passage in the much-swollen left bronchus, and oxygen was directed into it through the bronchoscope and artificial respiration started. By now she was pulseless and extremely cyanosed. At this stage the abdomen was noted to be grossly distended and tympanitic. Two needles were introduced into the flanks and air at once hissed out. Artificial respiration was continued and the pulse quickly returned, followed by spontaneous respiration and improvement of colour, the disappearance of the bronchial swelling being seen to occur during the next ten minutes. She was returned to the ward 1½ hours later, and recovered consciousness about four hours after leaving the theatre. She was given 51 g. of sulphamezathine between Aug. 19 and 25 to prevent mediastinitis. During this period the temperature remained between 97° and 100.8°. A radiograph of the chest and abdomen on Aug. 19 showed a right-sided pneumothorax and a considerable pneumoperitoneum. A further radiograph on Aug. 29 showed neither pneumothorax nor pneumoperitoneum. She was discharged on Aug. 31 symptomless, apyrexial, and free of physical signs, and has remained well since.

No oxygen was administered to this patient until after the emphysema had developed, and it can only be surmised that the laryngeal, tracheal, or bronchial mucosa was damaged by the bronchoscope. It is not easy to account for the pneumoperitoneum, but the presumption is that air in the mediastinum forced its way through one or other of the weakly protected orifices in the diaphragm into the retroperitoneal space. There is no anatomical route to explain its passage from the retroperitoneal space into the peritoneal cavity. Rupture of the peritoneum by adhesions due to distension of the retroperitoneal space would be a possible explanation. The same difficulty arises in explaining the pneumothorax.

The speedy recognition and treatment of the obstructed airway and of the pneumoperitoneum undoubtedly saved the life of this moribund patient.

Case II

A boy aged 5¼ was admitted to hospital for bronchography under general anaesthesia. Acute mediastinal emphysema and a bilateral shallow pneumothorax occurred as a result of a sudden delivery of oxygen into an intratracheal catheter, the accident being due to a faulty check-valve. Acute emphysema quickly developed, beginning with the eyelids and rapidly involving the face, neck, and upper chest. Needles were inserted into the neck, and the superior mediastinum was entered; no air could be aspirated. The left chest seemed hyperresonant, but no air escaped from a needle inserted into it. Oxygen was given by the B.L.B. mask, and the child made a complete and uneventful recovery. He was discharged five days after bronchography, the radiograph taken on discharge showing that both lungs had completely re-expanded.

Conclusions

Prevention.—While it is not always possible to prevent this condition, as in Case I, there are certain important rules to be observed: (*a*) maintenance of a free airway; (*b*) avoidance of high intra-alveolar pressures—e.g., due to sudden rush of oxygen or anaesthetic gases or to the patient straining; (*c*) care in manipulating tubes so as to avoid damaging the respiratory tract mucosa.

Treatment.—Attention to the following points in treatment, with the possible exception of (*c*), has been an important factor in saving the lives of patients: (*a*) Aspiration of the ballooned tissues of the neck should be attempted, as described by Barrett and Dillwyn Thomas (1944). (*b*) Obstruction of the airway should be relieved; pure oxygen should be administered under low pressure. (*c*) Signs of pneumothorax should be sought and, if present, pleural puncture should be carried out. (*d*) The abdomen should be examined and needled if gross tympanitic distension is present.

I am indebted to Mr. K. W. Mackenzie and Prof. H. A. Harris for their help and criticism.

Reference

Barrett, N. R., and Thomas, D. (1944). *British Medical Journal*, **2**, 692.

A NOTE ON FAT EMBOLISM

BY

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Fat embolism enjoys a curiously honoured place in surgical literature, for no very obvious reason. Everyone knows of it because the most elementary textbook intended for the beginner invariably devotes valuable space to it; but how many surgeons have consciously seen a case and recognized it? The great similarity of all the accounts in the textbooks, large and small, suggests that the writers themselves have had no practical experience of the subject, and that, like their readers, they have gained their information from books. What makes this more extraordinary is that the British surgeon has written so little about it. When Watson (1937) wrote a full account of a case he appended a copious bibliography of some 50 items, in which the only paper from a British source was one dated 1882. Since then Robb-Smith (1941) has dealt fully with the condition from a pathological standpoint, Rowlands and Wakeley (1941) have recorded three cases, and Wilson and Salisbury (1944) eight cases in 1,000 battle casualties.

Put briefly, it may be said that fat embolism of the lungs is probably much more common than is recognized, though embolism in the systemic circulation is very rare. Robb-Smith thought that, of a series of 125 cases of death from accident, in 29 fat embolism probably played a major part in producing a fatal result; but both the symptoms and the post-mortem picture so closely resemble those found in bronchopneumonia that unless special staining technique is employed, such as he describes, the true nature of the condition will be missed.

The difficulty in systemic embolism is to explain how the fat passes through the lung capillaries in a globule large enough to cause trouble elsewhere. Possibly minute globules which can pass through the lungs coalesce into larger ones on reaching the heart and being subjected to the churning movements of that organ. This would appear to be more probable than the ingenious, if fantastic, suggestion of one writer that this condition can occur only in a patient with a patent foramen ovale.

The case now under consideration is a little unusual in that there were no pulmonary signs at all. The usual course of events is that after a fracture there is a period of 24 hours when the patient is comfortable, and then, somewhat suddenly, he becomes dyspnoeic and cyanosed and sweats profusely. Sputum is scanty and frothy, and may, but only rarely, have fat in it. Later he may show delirium, strongly resembling delirium tremens. By this time the surgeon has probably most unfairly blamed the anaesthetist on the one hand and the patient's habits on the other. The anaesthetist, if he knows the literature, will retaliate with an accusation of rough manipulation—again perhaps unjustly, as the case described below had neither manipulation nor anaesthetic.

Case History

A man aged 59 sustained a fracture of the left tibia and fibula, with some displacement, on March 21, at 12.30 p.m. He was transferred from one hospital to another owing to shortage of beds and was admitted, quite comfortable, in box splints. At 6.30 that evening, before he could be put up in plaster, he suddenly collapsed, with faintness, cold and clammy skin, and a pulse rate of 56. There was no dyspnoea or cyanosis. During the night he was wandering and strange in manner, and the next morning he was comatose. The limbs were a little spastic, the knee- and elbow-jerks were exaggerated, and the plantar reflexes extensor; abdominal reflexes were absent. Pupils were equal but very small. Petechial haemorrhages were present in the skin. Lumbar puncture produced a clear fluid under normal pressure: cells, 2 per c.mm., all small lymphocytes; protein, 0.04%; no globulin. His condition rapidly deteriorated, the temperature rising steadily to 104°, and death occurring 72 hours after admission

At the necropsy only the brain was examined, and that showed the typical picture of multiple pin-point haemorrhages scattered through the white matter only. The excellent coloured photograph in Watson's article might have been taken from this case. I am indebted to Dr. H. H. Gleave for the report on the pathological specimen:

"*Brain.—Macroscopic:*—The cerebrum shows numerous tiny points of haemorrhage scattered in the white matter. The grey matter is not affected. *Microscopic:*—The small vessels of the white matter show perivascular haemorrhage and necrosis. These changes occur without any evident relation to a vessel. No change is seen in the cortex. Frozen sections stained for fat show globules and masses of fat in some of the vessels. No fat can be demonstrated in the majority of the vessels, but where it is present the appearance is characteristic. There is no inflammatory reaction around the necrosed area."

This follows closely the descriptions given in the other articles already quoted. The interesting point is that, although quite definite fat emboli can be seen in the vessels, they are neither so numerous nor so striking as the areas of necrosis and haemorrhage.

Comment

The symptoms in this case appear to be quite typical. Briefly, the important points to look for, as shown by this and other cases, are:

1. A latent period of three hours to three days.

2. A sudden collapse associated with profuse sweating and cyanosis, but no fall of blood pressure. As one American writer puts it pithily: "Shock—three hours. Fat embolism—three days. Pulmonary embolism—three weeks." This collapse and the very profuse sweating which has been referred to by all observers should help to distinguish this condition from pulmonary oedema or bronchopneumonia.

3. Pin-point pupils, exaggerated deep reflexes with absent abdominal reflexes but no localizing signs. Cerebrospinal fluid normal.

4. Hyperpyrexia in the later stages. Petechial haemorrhages make the diagnosis certain. Fat may occasionally be found in the sputum or urine, but not often enough to be of much help.

References

Robb-Smith, A. H. T. (1941). *Lancet*, **1**, 135.
Rowlands, R. A., and Wakeley, C. P. G. (1941). Ibid., **1**, 502.
Watson, A. J. (1937). *Brit. J. Surg.*, **24**, 676.
Wilson, J. V., and Salisbury, C. V. (1944). Ibid., **31**, 384.

Medical Memoranda

Staphylococcus pyogenes Septicaemia treated with Penicillin

The report of Howells *et al.* (1945) on the successful use of penicillin in two cases of *Staph. pyogenes* septicaemia prompts me to hope that the following case might also be worthy of record.

CASE REPORT

A Polish officer aged 53 was admitted to the Royal Masonic Hospital on April 27, 1945, complaining of continuous epigastric pain during the past four weeks. He gave a history of trichiniasis at the age of 15 and rheumatic fever at 25. In 1940, at a routine medical examination, evidence of organic heart disease was discovered, and he was down-graded to the lowest category. Apart from occasional palpitation and indefinite fleeting pains in various parts of his body, he remained in reasonably good health until one month before admission, when he gradually became aware of increasing upper abdominal pain, unaffected by food. Two weeks later the pain became much more severe, so that he was unable to sleep. He was treated for indigestion, but without result. For the three days preceding his admission to hospital he had observed oliguria. He had no cough, dyspnoea, or chest pain, and had lost no weight.

On examination he did not seem to be very ill. His temperature was 100.6° F., pulse 100, and respirations 20 a minute. There was slight cardiac enlargement to the left, the aortic and pulmonary second sounds were about equal in loudness, and there was a rough systolic apical murmur transmitted towards the axilla. No thrill was palpable. The rhythm was regular, the B.P. 150/95. The lungs were clear; the abdomen was distended and tympanitic; the liver was not obviously enlarged, but its edge was tender on deep inspiration; the spleen was not palpable. There was minimal oedema of the ankles. No other abnormalities were detected. Blood count: leucocytes, 9,000 per c.mm. (neutrophils 7,290, eosinophils 270, basophils 0, lymphocytes 1,170, and monocytes 270 per c.mm.). Blood urea, 43 mg. per 100 c.cm. Urinalysis: albumin, faint trace; occasional leucocyte, erythrocyte, and granular cast. Chest skiagrams showed some prominence of the aortic arch, but nothing else abnormal. E.C.G. within normal limits.

The patient continued to run a low-grade intermittent pyrexia with an evening rise of temperature to 100–101° F., and there was little change in his general condition until May 2, when, during the night, he complained of considerable abdominal pain, chiefly in the left hypochondrium. In the morning his spleen could easily be palpated three fingerbreadths below the costal margin; it was slightly tender. Blood cultures were taken, and after five days' incubation *Staph. pyogenes aureus* was grown. The organism was coagulase-negative and its sensitivity to sodium penicillin was greater than the standard Oxford strain. Accordingly, on May 11 a course of intramuscular injections of penicillin, 15,000 Oxford units 3-hourly, was begun. On that evening the temperature rose to 101.2° F., and was 101° F. on the following evening, but thereafter it fell progressively, and from May 16 onwards (the sixth day after starting penicillin therapy) it never exceeded 98.4° F. In all, 2,040,000 units of penicillin were given over a period of 17 days. Within two days of the commencement of penicillin therapy the patient claimed to be feeling much better, and he made an uninterrupted and uneventful recovery, to be discharged in apparently good health, though still with an enlarged, but non-tender spleen, on June 26—29 days after cessation of penicillin therapy. It is interesting to note that during the month of June he sat the London University B.A. final examination in classics, while still a patient in the hospital.

DISCUSSION

At first the diagnosis was obscure, and it was thought that there was a mild degree of cardiac failure, of rheumatic origin, causing abdominal discomfort as a result of portal congestion, but the persistent intermittent pyrexia remained unexplained. The sudden development of splenomegaly accompanied by severe abdominal pain immediately suggested splenic infarction due to subacute bacterial endocarditis and led to the taking of blood cultures. The fact that these grew *Staph. pyogenes aureus*, together with the rapid, satisfactory, and apparently complete cure by means of penicillin, strongly suggests that the disease process was merely a septicaemia, without any actual endocarditis, while the constancy of the cardiac signs—the apical systolic murmur having remained unchanged—still further bears this out. This case, therefore, was one of simple *Staph. pyogenes* septicaemia of obscure origin, successfully treated with penicillin.

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REFERENCE

Howells, L., Hughes, R. R., and Rankin, R. (1945). *British Medical Journal*, 1, 901.

Hysteria Mimicking Meningism

The pleomorphism of hysteria should be kept in mind when making a diagnosis of acute cerebral disease, otherwise a bed may be occupied, unnecessary investigations made, and the doctors' time wasted; nor should the fact be forgotten that any investigations or examinations tend to "fix" conversion symptoms as a reality in the patient's mind, making their removal more difficult and the ultimate prognosis worse.

CASE HISTORY

The medical officer of an R.A.F. station was called at 1.30 o'clock on a Saturday morning to see an airman who had been discovered unconscious at the foot of a ladder in a room which he had been painting; there was no witness of the man's collapse, and the only history available was that he had had a headache of increasing intensity for three days. Physical findings were as follows:

The patient was a young man of good physique, with no signs of injury. He lay on his side, curled up, with his face turned from the light; he showed hyperaesthesia—being resistant to interference, and holding his head, which appeared to be aching severely. Beyond these manifestations he could not be roused. Physical examination otherwise was negative. Pulse 76, temperature 98.5°, respirations 22. He was immediately transferred to an isolation hospital for observation.

When the M.O. was discussing the case with his Service colleague the next morning, the latter was immediately struck by the resemblance of the history to a case that he had seen when working as a psychiatrist at an E.M.S. neurosis centre. The patient's best friend was sent for, and on questioning about the airman's domestic life, etc., revealed that his fiancée had broken off their engagement a week previously. The doctor at the isolation hospital was given this information, with the suggestion that hysteria should be considered as a possible diagnosis, but full investigations were in progress, and the patient had been placed on the "dangerously ill" list. Lumbar puncture and skiagrams of the skull were normal and no physical findings other than those detailed above were elicited at any time. He was being nursed in the dramatic surroundings of a glass-walled isolation ward, and his mother expressed the intention of not leaving his side until he "became conscious." On Monday morning one of us visited him, and he looked ill, having a bloated appearance, his face being purple-hued from lying in one position for a prolonged period. The only reaction that could be elicited was a restlessness when his financée's name was mentioned. On the Wednesday, the fifth day of illness, the patient's condition was unchanged; he had eaten nothing and drunk little. The doctor of the isolation hospital agreed that the case was not infectious and the patient was returned—in the same state as originally found—to the R.A.F. station sick quarters. Immediately on his arrival intravenous pentothal was administered by one of us; the patient abreacted, two main emotional precipitants being evoked—his broken engagement and his distress over the wounding of a brother who was fighting in Burma. The patient made a rapid recovery.

The history of the case that gave the clue on this occasion was briefly as follows. A middle-aged soldier, who had been painting a room alone, was found unconscious at the foot of his ladder in the middle of the night; he was admitted to a Service neurological hospital, where for four months he underwent exhaustive investigations. He was unconscious for three days and then became totally blind. Four trephine holes were made in a search for subdural haematoma. Four months later, when he was admitted to the neurosis centre, the task of the psychiatrist was simple, as all possible organic causes for his blindness had been eliminated. He recovered his sight within a day, after abreaction under sodium amytal, the (apparently) trivial cause of all the trouble being his dislike of Service life and resentment at having to work alone every night for a fortnight without assistance.

COMMENT

It is not often realized by practitioners that a very trivial situation in the present may act as a precipitant of conversion symptoms of severe or even fatal intensity as, for example, may be seen in anorexia nervosa. The hysterical condition may so dominate the picture as to repress the normal instincts whose satisfaction is necessary for survival. The illogicality of hysterical symptoms is borne out well in the second case mentioned. An apparently trivial stimulus rendered a man unconscious for three days and blind for four months. He had to undergo the discomforts and hazards of several lumbar punctures, a ventriculogram, and a general anaesthetic so that his skull might be trephined.

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A. H. Meyer (*Ann. intern. Med.*, 1945, **22**, 543) records his observations on 165 cases of meningococcal meningitis with 9 deaths—a mortality of 5.3%. In 150 cases proved bacteriologically the mortality rate was 4%. Sulphadiazine was the main therapeutic agent, but meningococcus antitoxin and repeated lumbar punctures to relieve intracranial pressure were valuable adjuncts in certain cases.

Reviews

HAEMATOLOGY OF CHILDHOOD

Atlas of the Blood in Children. By Kenneth D. Blackfan, M.D., and Louis K. Diamond, M.D. With illustrations by C. Merrill Leister, M.D. (Pp. 320; coloured illustrations. $12.00 or 66s. 6d.) New York: The Commonwealth Fund; London: Oxford University Press. 1944.

In these days when the emphasis is all on functional rather than factual teaching, the reviewer may well feel an initial prejudice on being handed a large volume on so specialized a subject as the haematology of childhood. Nevertheless, this feeling of prejudice rapidly changes to one of pleasure in handling this exquisitely produced atlas of haematology. The paper, the typography, and the ample margins remind one of the spacious days that have gone. The 70 coloured plates are not only accurate, they are works of art which are as beautiful as a collection of jewels or stamps. It seems, indeed, that in our modern emphasis on function we may be in danger of missing a vital element in medicine—the element that is present in the anatomical plates of Vesalius, in the illustrations to French's *Differential Diagnosis,* in the Hunterian and Wellcome Museums. That element is the drama of fact. The student who looks through this atlas may learn nothing of the venous pressure in profound anaemia or the life span of the erythrocyte, but he will recognize some of the cruellest denizens of the jungle of disease, such as haemolytic anaemia and leukaemia, and he will remember their bright and fearsome images when less vital memories have faded from his mind. In fact it is possible that the recent approach to medical education has been far too rationalistic, and we have been overlooking the importance of interest in making learning easy. The emotions which inspire the collector and the artist have been powerful aids to medical teaching in the past, and we cannot afford to sacrifice such forces when the art is so long and life so fleeting. One cannot help feeling that the average student might get more out of this book on diseases of the blood than out of Sir Thomas Lewis's *Exercises in Human Physiology.* Perhaps there is a tendency nowadays to put the cart before the horse in clinical education, and the student, like the child, might do well to begin with concrete phenomena, with patients and blood pictures, and end up with general principles and abstract reasoning. However this may be, we should like to see this atlas on the table of any department of paediatrics which teaches students. The 144 pages of text are simple and balanced. They are based on experience of more than 5,000 infants and children with disorders of the blood, and even senior haematologists will pick up something of value, as in the advice to give iron salts in fruit juice rather than milk, to avoid precipitation as phosphate; or in the evidence of the transient occurrence of pernicious anaemia in infancy as a result of acute infections and temporary achlorhydria. There is a full bibliography. The book is indeed a fitting memorial to the senior author, Dr. Kenneth D. Blackfan, who died in 1941 after a life largely devoted to the study of the blood in childhood.

BIOLOGY AND HUMAN WELFARE

New Biology—I. Edited by M. L. Johnson and Michael Abercrombie. (Pp. 116; with isotype charts and other illustrations. 9d.) London: Penguin Books.

The Penguin *New Biology—I* contains an astonishing amount of interesting information in a small compass. The editors' aim—helping to re-orientate biology teaching towards questions of human welfare—has been well carried out. It might be thought that the potato was not a very encouraging subject from that point of view, but Dr. R. N. Salaman, a recognized authority, presents us with a fascinating study, beginning with the original culture of the potato in Peru, where it was associated with a horrible ritual of face mutilation to imitate the "eyes." The introduction into Europe of the potato minus the ritual is told, and of the resistance to such a novelty met with everywhere except in Ireland. The social effects of the introduction of a cheap abundant food are discussed, and its influence in keeping wages low. The food value of the potato and its proneness to disease are also clearly described. Prof. Lancelot Hogben gives a somewhat mathematical discourse on the measurement of human survival, while Prof. Walter Stiles contributes an interesting account of the importance of "trace metals" (such as manganese, boron, zinc, and many others) to plant life; yet in more than minimal doses they are injurious. Mr. J. Z. Young records advances in our knowledge of the functions of the central nervous system, from which we learn that the concept of medullary "centres" is being refurbished on a more scientific basis. Prof. Le Gros Clark's article on "the anatomical basis of sensory experience" is complementary to Mr. Young's, and the two form an illuminating contribution. Mrs. Miles's account of the life-history of the wireworm (the larval stage of the click beetle, which takes four years to reach the chrysalis stage) and of the damage it does to agriculture is full of interest. Dr. M. L. Johnson's description of the malaria parasite and the extraordinary complexity of the problems presented by the mosquito is also of great interest at the present time.

This admirable little book is illustrated by plates and diagrams and provided with a glossary. If the editors can maintain the high standard they have achieved, *New Biology—II* will be well worth reading.

OBSTETRICS AND GYNAECOLOGY

Recent Advances in Obstetrics and Gynaecology. By Aleck W. Bourne, M.B., B.Ch., F.R.C.S., F.R.C.O.G., and Leslie H. Williams, M.D., M.S., F.R.C.S., F.R.C.O.G. Sixth edition. (Pp. 358; illustrated. 18s.) London: J. and A. Churchill. 1945.

Midwifery. Principles and Practice for Pupil Midwives, Teacher Midwives and Obstetric Dressers. By R. Christie Brown, M.B., M.S., F.R.C.S., F.R.C.O.G., and Barton Gilbert, M.D., F.R.C.S., M.R.C.O.G. Infants' Section by Richard H. Dobbs, M.D. Second edition. (Pp. 831; illustrated. 15s.) London: Edward Arnold and Co.

The sixth edition of *Recent Advances in Obstetrics and Gynaecology* is a worthy successor to its popular forebears. As stated in the preface there is much recorded in its pages which cannot strictly be classified as coming within recent advances, but the assessment of fact from fantasy is often the more authoritative for that very reason. The passing of time enables the new therapeutic measures of yesterday to be seen in their true perspective and reveals where emphasis has been wrongly placed. The sixth edition contains new chapters dealing with erythroblastosis, vitamin K, stillbirth and neonatal death, and nutrition in pregnancy. Of these particular mention must be made of the chapter on erythroblastosis, which as a lucid summary of the present state of knowledge could not be surpassed. In both ante-natal and post-natal care refreshing emphasis is given to the importance of considering the patient rather than the pelvis. Diet, posture, and exercise all receive the mention they deserve. In discussing cervical carcinoma the authors state that the Wertheim operation and all other operations for the surgical treatment of this condition have become obsolete. The subject is admittedly a difficult one, but it is possible that this is not the final pronouncement that *Recent Advances* will have to make on this subject. The best results so far obtained are not good, and better methods will in time be devised. They may be by irradiation, by surgery, or by a combination of both, possibly assisted by other and newer therapeutic measures. Until such time as the case is finally proven it would be regrettable if the technique of Bonney and his disciples were forgotten.

When a textbook written primarily for midwives is reprinted three times in four years and then is published in a second edition it needs no commendation from a reviewer. It must be gratifying for the authors of *Midwifery* to find that their somewhat unusual approach to the subject has been so widely and favourably received, for their book is no mere collection of facts to be memorized but an interesting and successful attempt to make the reader think logically and arrive at correct deductions from a basic minimum of factual knowledge. The new edition contains appropriate references to the Rh factor in its relation to erythroblastosis and to the dangers of blood transfusion. The work of Caldwell and Molloy on the classification of the pelvis is given considerable attention—possibly more than it deserves in a book of this type will be the comment of some obstetricians. Though there have been some slight additions to the section on breech presentation the authors still

do not emphasize the importance of episiotomy in breech delivery. This is a strange omission when advising the inexperienced. Additions have also been made to the sections dealing with ovarian physiology, hormones, labour, drugs, care of the infant, and foetal and placental circulation. The book concludes with a brief but most interesting account of the history of midwifery. It is to be hoped this section will be expanded a little in the next edition.

Notes on Books

We have received from the U.S. Office of War Information (1, Grosvenor Square, London, W.) a copy of the latest edition of a small work of 150 pages, *The Control of Communicable Diseases*. It is a manual of the American Public Health Association, first published in 1916. This, the fifth revision, has been prepared under the expert guidance of a subcommittee presided over by Prof. Haven Emerson. The manual is designed for the use of physicians, nurses, sanitarians, and public health officers in the United States, and since its purpose is to safeguard the welfare of the whole community the emphasis is upon methods of prevention and control. Except for a few illnesses in which a curative drug is also used for prophylaxis, therapy is not dealt with.

Dr. C. P. Blacker's Galton Lecture for 1945, entitled *Eugenics in Prospect and Retrospect*, was delivered last February at Manson House, London, before the Eugenics Society. This interesting lecture has now been published in pamphlet form by Hamish Hamilton Medical Books at 1s. 6d.

The Macy Foundation of New York has published a monograph entitled *Copper Sulfate Method for Measuring Specific Gravities of Whole Blood and Plasma*, by Lieut.-Cmdr. Robert A. Phillips and his fellow workers in the U.S. Naval Research Unit at the hospital of the Rockefeller Institute. This includes line charts for calculating plasma proteins, haemoglobin, and haematocrit from plasma and whole-blood gravities. Readers in the British Isles can obtain copies on application to the Medical Research Council, c/o London School of Hygiene, Keppel Street, London, W.C.1.

Volume 68 of the *Transactions of the American Gynecological Society* for the year 1944 is edited by Dr. Howard C. Taylor, jun., and published at St. Louis by the C. V. Mosby Company. It is, as usual, a well printed and fully illustrated work and contains nineteen papers and Dr. George W. Kosmak's presidential address; also eleven memorial notices of Fellows who have died. The signed articles have all appeared seriatim in the *American Journal of Obstetrics and Gynecology*. The Society, founded in 1876, has had many distinguished Honorary Fellows: in America there are now living seven, and of the seven foreign Honorary Fellows five are in Britain—Prof. J. Munro Kerr, Dr. T. Watts Eden, Sir William Fletcher Shaw, Mr. Victor Bonney, and Mr. Eardley Holland.

Preparations and Appliances

WIDE-BORE ENDOTRACHEAL CONNEXIONS

Major H. L. Thornton, R.A.M.C., anaesthetic specialist with a maxillo-facial unit, B.L.A., sends the following description of wide-bore endotracheal connexions. It was dispatched on Jan. 30, 1945, but went astray.

The endotracheal connexions illustrated in the accompanying photographs have been designed with a view to reducing to a minimum unnecessary resistance to respiration in lengthy operations under endotracheal anaesthesia.

The connexions are of two types, intended for nasal and oral use, the long-axial curvatures corresponding closely to those of the standard Magill's connexions. The overall length of the connexions is 7.5 cm. and the internal diameter of the distal ends is 7.5 cm., equal to the internal diameter of that part of the anaesthetic machine to which the facepiece unions are attached in most standard English patterns. From proximal to distal ends the expansion is smooth and uninterrupted, the proximal ends being slightly larger than the lumen of the tubes to which they are intended to be fitted. A beading at each end is intended to prevent accidental detachment of the connexion in use.

A short length of stiff-walled, wide-bore tubing unites the distal end of the endotracheal connexion to the anaesthetic apparatus without any further constriction or metal-to-metal joint, the latter feature being considered an advantage in obviating a possible source of gas leakage, which so often results from inaccurately fitting or damaged metal joints.

Since the connexions were primarily designed for a type of plastic tube previously described by me in this *Journal* (July 1, 1944, p. 14), the following technique for fitting such tubes to their metal connexions may prove helpful:

1. All grease is removed from the inside of the tube and outside of the connexion with ether.
2. The distal end of the endotracheal tube is thoroughly softened in boiling water.
3. The softened end of the tube is forced well past the beading on the connexion.
4. The softened end of the tube is immediately plunged into cold water and left until thoroughly set.

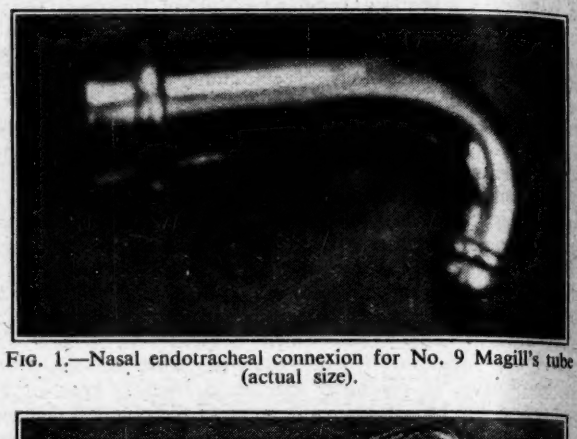

Fig. 1.—Nasal endotracheal connexion for No. 9 Magill's tube (actual size).

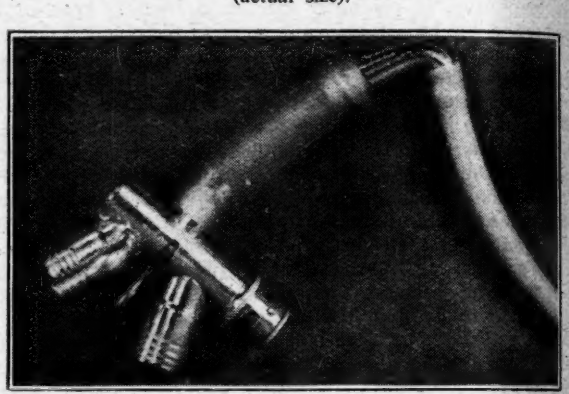

Fig. 2.—Nasal endotracheal tube, wide-bore connexion and union connected to part of anaesthetic apparatus.

Fig. 3.—Comparison of wide-bore connexions and union (above) with standard Magill's connexions and union (below).

When detaching a metal connexion from a plastic tube it is also necessary first to soften the tube in boiling water.

If these procedures are carefully followed, a firm attachment between tube and connexion can be assured, and splitting or damaging of tubes will be avoided.

I would like to express my thanks to the Director-General, Army Medical Services, for permission to publish this communication, and to Medical and Industrial Equipment, Ltd., for their help in producing experimental connexions.

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P AND Rh

With increasing knowledge of the serological complexities of human blood groups the hazards of blood transfusion can in expert hands be almost completely eliminated. Reliable anti-A and anti-B grouping sera are now so widely available, and knowledge of blood grouping is so much better generally, that accidents due to wrong ABO groups have become uncommon. Among the other blood-group factors the elimination of risk of incompatible transfusion is now mainly directed against the Rh factor: Diamond[1] has recently stated that among 32 haemolytic transfusion reactions only 5 were due to errors related to the ABO system, whereas 27 were due to Rh incompatibility. The M and N specific substances only very rarely prove antigenic in man; of the eight examples of human anti-M agglutinins hitherto discovered, five were probably natural and three immune iso-antibodies. It is noteworthy that anti-M agglutinins appear to act only at low temperatures (2-5° C.) and not at 37° C.; thus possibly the risk from this factor is minimized.

In the course of work on anti-M sera Landsteiner and Levine[2] encountered both natural and immune animal sera which appeared to make a further distinction between human bloods. The red cell antigen thus recognized they called agglutinogen P. This constituent is present in the red cells of approximately 75% of white persons, but investigation of families is hindered by the lack of potent anti-P sera. Factor P is inherited as a simple Mendelian dominant. A proportion of normal pig and horse sera contain anti-P agglutinins, but both these and sera prepared by the immunization of the common laboratory animals need preliminary absorption of the anti-A, anti-B, and anti-O agglutinins, and the resulting reagents are usually rather weak and may fail to give sharply defined reactions. Iso-agglutinins against factor P also occasionally occur naturally in P-negative human subjects, and when first encountered were called "extra-agglutinin one" by Landsteiner. Later, when found to correspond in specificity with anti-P agglutinins, the old name was dropped. Natural anti-P agglutinins are usually of low titre, but it is probable that they would be increased by the transfusion of P-positive blood. As late as 1943 Wiener[3] stated that transfusion reactions due to anti-P agglutinins had not been observed, though he had encountered two examples of relatively strong anti-P agglutinins in post-transfusion sera. Wiener and Unger[4] have lately described a third example of strong anti-P agglutinins developing apparently as the result of repeated blood transfusions. On the fifteenth day after the first of a series of blood and plasma transfusions, all of which had proved uneventful, difficulty was experienced for the first time in matching the recipient's serum with the corpuscles of a series of donors of his own group (A) and of Group O. The agglutinins were most active at ice-box temperature (titre 1 : 16), but visible reactions occurred at 37° C. A further transfusion of P-negative blood, found to be compatible by cross-matching tests, did not give rise to any reaction, and the anti-P titre rapidly fell. In the investigation of alleged transfusion reactions Cappell[5] has found one man with irregular agglutinins which on the whole corresponded with anti-P, but the reactions were mainly weak and not sharply defined. The evidence suggested that these were natural and not immune agglutinins. There is therefore still no record of a haemolytic transfusion reaction due to anti-P agglutinins, though it seems probable that Wiener and Unger's patient would have experienced one had the cross-matching test failed to detect the irregular agglutinins.

Naturally one thinks of the analogous situation in regard to the Rh factors; the role of iso-immunization in pregnancy and the place of factor P in the aetiology of haemolytic disease of the newborn have to be considered. There does not appear to be any published account of haemolytic disease due to factor P, but inquiry at a number of blood transfusion centres in this country has elicited a small number of cases in which factor P may have been concerned. The Galton Serum Unit, Cambridge, has records[5] of two families in which serological tests on account of previous obstetrical disasters revealed anti-P agglutinins in the mother's serum, the father being P-positive. One of the women was Rh-negative, and an "incomplete" anti-Rh antibody was also present in her serum. The Galton Unit has two other examples of anti-P agglutinins—one from a woman and the other from an infant—but details about these are lacking. At Leeds, Stanbury[5] has encountered two cases of anti-P agglutinins; in one, that of a P-negative mother whose husband was P-positive, the blood sample was submitted during the third pregnancy on account of two previous obstetric disasters. The only surviving child of this woman (a twin) was P-negative; the child born of the third pregnancy was, however, P-positive and did not suffer from haemolytic disease. Stanbury's other example of anti-P agglutinins was detected in the pre-transfusion cross-matching test of blood from a woman who was P-negative, the husband being P-positive. A remarkable feature of this case was that the anti-P agglutinin, as usual more active in the cold, was completely removed from the serum by standing in contact with its own clot in the refrigerator overnight. These may all be natural anti-P agglutinins, but where they already exist the natural antibody in a woman's serum might well be reinforced by iso-immunization during pregnancy with a P-positive foetus; in such women the transfusion of P-positive blood would be likely to provoke a haemolytic transfusion reaction. This catastrophe appears to have been averted in several of the above cases only by the careful cross-matching of the recipient's serum against the cells of the proposed donor. Since, in contrast to anti-Rh agglutinins, for which the tests should be performed at 37° C., anti-P agglutinins

[1] *New Engl. J. Med.* 1945, **232**, 447.
[2] *J. exp. Med.*, 1928, **47**, 757.
[3] *Blood Groups and Transfusion*, 3rd ed., 1943.
[4] *Amer. J. clin. Path.*, 1945, **14**, 616.
[5] Unpublished.

react best in the cold, there is a good chance of detecting them in tests at room temperature or, better, at 2–5° C., using the control of the patient's own cells and serum to avoid confusion with cold agglutinins. It is another point in favour of routine cross-matching tests preceding all transfusions, and especially in cases of repeated transfusion from the same donor, in spite of the absence of incompatibility previously. Cross-matching tests alone cannot, of course, be relied upon to detect Rh incompatibility, for the presence of "incomplete" or "blocking" antibodies may mask the presence of anti-Rh agglutinins, and the only safe practice is to ensure that Rh-negative women receive only Rh-negative blood, whether anti-Rh antibodies have been detected in their serum or not.

Recent knowledge of blood groups and of iso-immunization has thus made it possible not only to safeguard the individual against the dangers of receiving an incompatible transfusion, but also very largely to protect the person against the risk of initiating the process of iso-immunization. Since one person in seven is Rh-negative, the opportunity of sensitizing Rh-negative individuals by transfusion of Rh-positive blood occurs frequently, although in fact only a few will become sensitized to the Rh antigen. The risk to women in the reproductive period of life is particularly great, for the initial stimulus may later be reinforced by pregnancy with an Rh-positive foetus, entailing as a consequence the danger of haemolytic disease. This hazard has not been widely enough recognized, and, further, Diamond[1] has emphasized that the most severe forms of haemolytic disease occur in infants of women sensitized by transfusion. Such catastrophes will not be prevented until it is the universal rule to test for Rh factor every young woman requiring transfusion and to administer only the appropriate type of blood. In obstetric practice the time has come when ascertainment of the blood group, including the Rh factor, should be regarded as an essential part of antenatal care. If obstetricians would co-operate to provide adequate supplies of anti-Rh sera from proved cases of haemolytic disease, it would be possible to instruct obstetric registrars and resident clinical pathologists in the relatively simple tests necessary to determine whether an individual needing transfusion is Rh-positive or Rh-negative, and in the latter case to ensure that only Rh-negative blood is given. The more intricate investigation for anti-Rh antibodies of either the agglutinating or the "incomplete" type is here unnecessary; Wiener's biological test of giving 50 c.cm. of Rh-positive blood and looking for a rise in the serum bilirubin after one hour is slow, and in any event is not without risk if the patient happens to be already sensitized. For practical purposes the subdivisions of the Rh factor may here be ignored, and individuals divided into those whose blood corpuscles react with standard anti-Rh serum (anti-Rh_0) who may safely receive Rh-positive blood, and those failing to react with this serum, who should receive Rh-negative blood irrespective of whether they happen to belong to one or other subtype (Rh′ or Rh″). With regard to factor P, preliminary tests to distinguish P-positive and P-negative individuals are not easily available and are unnecessary; the danger of a haemolytic reaction due to factor P is small and is probably safeguarded adequately by careful cross-matching of the bloods at room temperature. In all cases it should of course be an absolute rule not to transfuse any blood which exhibits even a trace of reaction in the cross-matching test.

STUDY OF FOOD HABITS

There is no doubt some good reason why the reading of an American manual on the study of food habits[1] should leave one still groping for definition. Implicit in the pages of the manual is the definition we are seeking; yet it evades us. Perhaps there are temperamental differences, which should be taken into account; perhaps the phraseology is at times unfamiliar. Yet it is worth while to look deeper; and instinctively we turn to the relevant paragraphs of the report on "Nutrition in the Colonial Empire" which appeared in 1939.[2] After all, there is a curious similarity in flavour between these two momentous publications. Do we forget that in the American soil are embedded so many diverse communities—Czechs and Italians, Irish and Chinese, negroes whose remote forebears came from the West Indies, and negroes whose even more remote ancestry sprang direct from the western coasts of Africa? A primitive and undisturbed population may foster food customs that could be improved; but they are customs that have been moulded by tradition to the sources of the food supply; they have acquired a certain measure of balance, an intrinsic survival value. It is when these traditional habits of life have been radically disturbed by the relaxing of the old tribal relationships, by urbanization, by reservations, and by the modes of existence formed in a factory or plantation economy that the real problem of the colonial administrator begins. Food habits are persistent; and rice will be eaten, be it coarsely cleansed in the peasant's hut or polished in the mill. A community of negroes in the United States will attempt to mould such foods as are available towards the traditional pattern. Many modifications are inevitable—in the choice of foods, in the preparation, in the storage. But the persistence of old patterns is strong enough to impart a peculiarly anthropological flavour to the work of the American investigator. His material lies at his own door; allowing for a multitude of differences, his problem is much the same in substance as that which presents itself to our own investigator in Ceylon, Gambia, or Zanzibar.

Needless to say, there is far more to be found in the manual than a mere exercise in anthropological ingenuity; yet here, it seems, lies its point of departure. Here, too, possibly rests our own stumbling-block. In this country there are many variations in food habits and preferences; but few have ventured to study them objectively or to escape the abiding belief that we are all of us, research worker and material alike, woven from the same fabric of traditional prejudices. Objectively we can assess the values of the dietary common to a given sample of families. Vaguely we perceive that ignorance is playing its part;

[1] *Manual for the Study of Food Habits*, Bulletin No. 111, published by the National Research Council, National Academy of Sciences, Washington, D.C.
[2] Cmd. 6050, H.M. Stationery Office. (3s.)

but we prefer to round off our inquiry with an estimate at what level of income these families might be expected to purchase an adequate diet; and beyond that we appeal to proverbial wisdom. "The ignorance (and sometimes the prejudice) is not confined to those who are themselves undernourished. It exists also among those who have power over nutrition of others: Government officials, members of Legislative Councils, employers of labour, education authorities, missionaries. . . ." In such a way did our own workers on colonial nutrition prelude their discussion on the factor of ignorance and the need for education. The words may not be written up in our medical schools; but the sense of them affects the trend of our researches. It probably accounts for the fact that in an exhaustive list of almost 700 references the American workers cite no more than 5% that bear upon the study of food habits and preferences in Britain. There have, of course, been many unpublished studies made during the period of war. But the war inquiries were prompted by the official desire to know how the public responded to rationing and to the other wartime changes in our food economy. If this new field of science is to be explored to the full we must necessarily begin by a close study of American methods and experience; yet we must also begin by elaborating our own definition and convincing ourselves that here is a field worthy of exploration.

Let us, then, attempt an essay in definition that may satisfy the temperament of our own workers. A quotation from the American manual will be of help at this point. "Action in a field like this," say the writers (p. 26), "can be taken only on the basis of concrete knowledge. We need to know what sections of the population have what types of food habits, so that steps can be taken either to preserve them or to change them, in part or altogether, so that the population in question will make better use of the available food supply. Experience has shown that the attempt to think through problems of food habits in a cultural vacuum, in terms of abstract psychological principles, is unrewarding." Now, this sentiment is practical; and one can perceive at once that the path to definition must lie through a process of hardening the practical issues. What is it we want to do? Obviously, to begin with, propaganda; and in the course of propaganda to discover what we lack in the way of objective knowledge about the community we are seeking to influence. Let research branch from experience. Temperamentally, in a matter of this kind, we are by nature neither cultural anthropologists nor psychologists. But we are at least anxious that our emerging nutrition services should be expanded to the full; and it is our duty, as medical men and women, to see to it that the wartime improvements in the national dietary are maintained in the period of peace. This is a problem mainly for the propagandist and educationist. Our own inclination would be to subordinate the study of food habits to the sphere of education and instruction; and an appropriate home for a study of this kind might perhaps come within the ambit of such an organization as the Central Council for Health Education, between which and the Food Advice Division of the Ministry of Food a series of practical links could with advantage be contrived.

THE PATHOGENESIS OF TUBERCULOSIS

That the problem of tuberculous infection is still a subject of argument is a measure of our ignorance. It is becoming more than ever necessary to find an answer to such questions as: How is tuberculosis acquired? How may primary and re-infection lesions be distinguished from one another? By what mechanism is the re-infection lesion produced? These can be answered only when careful pathological study has enabled us to form a clear picture of the initial stages of the disease. Terplan's[1] useful contribution to the matter consists of a careful post-mortem study, both anatomical and radiological, of tuberculous patients and those who have died of other diseases. The tuberculous lesions are described in detail, and several facts have emerged which stimulate thought.

Some of his observations seem only to make our problems more difficult. For instance, he finds that a primary focus in the lung can occur without the typical complex involving the regional glands; and that a re-infection lesion can exactly simulate a primary complex. It is even probable that repeated "primary" infections can occur at different times in the same individual. Other findings support the theory that so-called "epituberculosis" in children is commonly the result of bronchial obstruction by tuberculous granulation tissue in the course of the primary complex. Terplan also stresses the frequency of primary infection in adults. An interesting observation by Terplan is the part which the bronchi appear to play in the spread of infection. There is good evidence that localized bronchial spread often occurs in the course of the primary infection, with the production of small caseous pneumonic lesions around the primary focus and elsewhere in the lungs. Again, tuberculous lesions which have resulted from re-infection, as judged by the presence of a separate primary complex, also have pathological features which suggest a bronchial origin. The old theory that secondary tuberculosis results from endogenous re-infection receives no support, because in many cases of re-infection tuberculosis the primary complex was completely healed and obsolete.

The suggestion has been made that the frequent occurrence of re-infection lesions in the posterior parts of the upper lobes may be explained by the fact that foreign material, such as iodized oil, tends to be inhaled into these areas when the patient lies on his back (Bannen,[2] Brock[3]), and that tuberculous re-infection is therefore the result of bronchial embolism. It is, however, difficult to see why the individual should be lying down when he acquires his infection, and Wingfield[4] has pointed out that a minute inhaled droplet might behave differently from a blob of iodized oil introduced artificially. He put forward the hypothesis that repeated inhalations of tubercle bacilli might disturb the immunity balance in the same way as repeated injections of tuberculin. Such a disturbance might increase the activity of bacilli lying dormant in minimal and unrecognized lung lesions. This hypothesis receives some support from the work of Terplan, who found that the scattered lesions produced by bronchial spread from the primary focus often arose in other parts of the lungs and frequently in the upper lobes. Many of these lesions showed a mixture of caseation and calcification, suggesting incomplete healing, and it is easy to imagine a recrudescence of activity in them resulting from a disturbance of the patient's immunity; this would produce re-infection lesions of the "bronchogenic" type described by Terplan.

Thus we can imagine the following sequence of events in the development of tuberculosis. Before the active

[1] *Amer. Rev. Tuberc.*, 1940, **42**, Supplement, 1; 1945, **51**, 91, 133, 172, 321, 351.
[2] *British Medical Journal*, 1942, **1**, 309.
[3] *Guy's Hosp. Rep.*, 1942, **91**, 131.
[4] *British Medical Journal*, 1942, **1**, 637.

primary focus has become encapsulated small emboli of caseous material are carried from it by the bronchi to other parts of the lungs. Here they give rise to minute lesions, often too small to be visible in a skiagram, which either heal or remain dormant. A fresh exposure of the patient to large doses of tubercle bacilli then disturbs his immunity so that one or more of these dormant lesions becomes active. This is an attractive hypothesis and seems to fit the facts, but there are still many gaps to be filled. It is a pity that Terplan does not record whether viable tubercle bacilli have ever been isolated from these incompletely healed focal lesions.

CANNED FOODS

In 1810 Nicholas Appert[1] described a new method of preserving foods by heating them in well-stoppered bottles immersed in boiling water. In England, about a year later, John Hall and his associate Bryan Donkin laid the foundations of the canning industry by using this method with iron containers instead of bottles. To-day the annual production of cans for foods runs into many millions, and it is generally recognized that controlled canning is one of the most satisfactory methods of preservation. Flavour, colour, and texture are well maintained; no chemicals have to be added; no special equipment is required for storing the final product, and the housewife has no preparation to carry out beyond re-heating. But what of the nutritional value of canned products? From preliminary work by Kohman and his colleagues in America about 20 years ago results indicated that the value could be rated high. Later, a very thorough experiment on this subject was carried out in Scotland by Godden and Thomson.[2] Working with successive generations of rats over a period of 18 months, they fed one group on nothing but canned foods—including meat, fish, vegetables, fruit, milk, bread, and syrup—and a comparable group on similar foods shop-purchased or locally grown and cooked under household conditions. Throughout the test they found the two groups comparable in all respects—i.e., as regards growth, breeding, and composition of the body as a whole, as well as of teeth and bones separately. One important food constituent was, however, not covered by this investigation. Rats are independent of ascorbic acid in foods, and it was therefore possible that this vitamin might be destroyed by canning. Olliver, however, had shown[3] in 1936 that the loss of ascorbic acid was extremely small, not only for the actual canning process but also for subsequent storage of the can because of the very low oxygen content in the sealed container. It therefore appeared that canning could be regarded as a satisfactory means of preserving all the qualities of foods, including their nutritional value. Further evidence in support of this view was cited by many workers in different countries, the individual vitamins being considered in the majority of the investigations. Both plant and animal products, however, show much variation in the amounts of the different vitamins they contain, due to variation in factors such as maturity, soil, and climatic conditions. Hence it is to be anticipated that, even though destruction during canning may be small, canned foods should show a similar variation. An interesting investigation which has just been completed in America[4] confirms this by the determination in 823 commercially canned samples of the contents of ascorbic acid, carotene, riboflavin, nicotinic acid, vitamin B_1, and pantothenic acid. While, therefore, the efficiency of modern canning processes in retaining nutritional value can be accepted, it must also be recognized that the fixing of standards for the vitamin content of various canned foodstuffs presents very great difficulties.

[1] *Le Livre de tous les Ménages ou l'Art de Conserver pendant Plusieurs Années Toutes les Substances Animales et Végétales.*
[2] *J. Soc. chem. Indust.*, 1939, **58**, 81.
[3] Ibid., 1936, **55**, No. 24, 153T.
[4] *J. Nutrit.*, 1944, **28**, 101.

THE MAKING OF SCIENTIFIC INSTRUMENTS

In 1895 the Cambridge Instrument Company was registered as a limited company, although for seventeen or eighteen years before then it had existed as a private concern. The jubilee is commemorated in a booklet entitled *Fifty Years of Scientific Instrument Manufacture*. The story really begins in 1883, when Michael Foster, who had been appointed to the new chair of physiology at Cambridge, wished to equip his laboratory with apparatus, and A. G. Dew-Smith, a wealthy amateur and a member of Trinity College, came to his assistance and provided a workshop with a skilled instrument-maker. Dew-Smith entered into partnership with Horace Darwin, son of Charles Darwin, and the Cambridge Instrument Company was started. The early workshops saw the making of anthropological instruments for Francis Galton, cloud cameras for Kew Observatory, a temperature regulator for the Board of Trade, and a large range of physiological and physical instruments for the university laboratories. Most of the earliest instruments had physiological or biological applications; some of the most outstanding were microtomes for cutting thin sections of animal or vegetable tissue. A very important chapter in the history of the company is concerned with the manufacture and development of instruments for measuring and recording temperature. The company also played an important part in the development of the electrocardiograph. In 1903 Einthoven of Leyden devised his string galvanometer, which was immediately employed for determining the wave-form and extent of the heart-action currents, and the Cambridge company, in close association with Einthoven, developed a galvanometer with accessory equipment which could be employed, in conjunction with clinical examination, for the diagnosis of heart disease. The development of the Cambridge cardiograph, as the instrument was named, was carried out in close co-operation with Thomas Lewis, and the first complete installation was fitted in 1909. Whereas the original apparatus of Einthoven occupied a whole laboratory, and the electromagnet was enclosed in a water-jacket to prevent overheating, the present equipment is so compact that it can be contained in a suitcase and taken to a patient's house. An account of many other instruments is given, including the apparatus for timing extremely small intervals for the study of nervous impulses, also the device for rendering visible the path of the alpha particles of radium. This illustrated record is much more than the history of a commercial enterprise: it is a footnote to the scientific investigation of the last half-century.

Dr. W. Russell Brain will give the Bradshaw Lecture on "Speech and Handedness" before the Royal College of Physicians of London on Thursday, Nov. 8, at 5 o'clock.

At the invitation of the Ministry of Health and Local Government for Northern Ireland, Lord Amulree of the Ministry of Health, Mr. George Stebbing of the Radium Commission, and Dr. Ralston Paterson of the Christie Hospital and Holt Radium Institute, Manchester, recently visited Northern Ireland. In the course of a few days they visited several hospitals, both voluntary and rate-aided, and had discussions with hospital staffs and others interested in the early diagnosis and treatment of cancer. The visitors expressed the opinion that Northern Ireland offered a particularly good opportunity for the formation of an ideal cancer organization.

REHABILITATION OF PATIENTS SUFFERING FROM SKIN DISEASE

BY

R. MASON BOLAM, M.D.

Major, R.A.M.C.

The subject of rehabilitation has become of increasing importance in recent years in connexion with industrial accidents and disease and in the recovery of members of H.M. Forces from illness and injuries. It has been shown conclusively, for example, that much time can be saved by properly co-ordinated exercises and physiotherapy when a limb has been fractured.

In certain branches of industry, such as coal-mining, a great number of accidents occur each year, and it is noteworthy that both owners and workers contribute large sums of money towards the rehabilitation of miners on an organized basis. This may take the form of gifts of specialized equipment for physiotherapy departments at general hospitals, the financing of convalescent homes, the opening of fracture and accident wards or of hospitals staffed and equipped in such a way as to return the worker to his industry in the shortest possible time.

The Army has found it necessary to provide rehabilitation centres and convalescent depots to which men who have had illness, operations, or wounds are sent to be helped to regain full fighting fitness by mental and physical training of varied and graduated type under expert instructors, with careful medical supervision.

In the last ten years industrial hazards have grown in number and complexity, and many processes connected with the making of armaments, munitions, and aircraft involve the use of powders and liquids that are injurious to the skin. Wartime conditions and service in the Forces have also been responsible for a large increase in the number of cases of skin disease, many of which are of considerable severity and necessitate long periods of treatment in hospital. The effect of service in tropical and semi-tropical climates is often to bring out any latent tendency to skin disease or to accentuate an existing complaint which had not been considered serious before. On the home front, the stress and strain of long hours at work, added to responsibilities from shortage of staff, have caused minor examples of skin disease to assume crippling proportions, so that the patient has been forced to cease work.

In many cases of skin disease a nervous element appears to predominate. Enforced changes in our diet have probably played their part in producing some types of skin disorder, and there has been a big increase in the number of severe cases of seborrhoeic dermatitis. Sulphonamide drugs have proved of inestimable value in the treatment of many different diseases, but they have been the cause of many cases of sensitization dermatitis, which may last for several months and prevent the patient from doing his work. Such cases as these are greatly in need of expert treatment and rehabilitation, and, so far as is known, no attempt has been made to assist them in the stage of convalescence.

The First Experiment

In April, 1943, at the instigation of Brig. R. M. B. MacKenna, A.M.S., some 70 beds were allocated for the rehabilitation of dermatological cases. The auxiliary hospital of the British Red Cross and Order of St. John at Ragley Hall, Alcester, Warwickshire, was the site of this first experiment in the rehabilitation of patients with skin diseases, and the Commandant, Lady Helen Seymour, gave her full co-operation in this new work. From the beginning the hospital has been full. There has been a constant demand from military and other hospitals for beds for skin patients who need a period of readjustment before returning to duty.

The hospital is situated in a historic building in beautiful park land, some 20 miles from Birmingham, and the work is shared by the Matron, two sisters (day and night), nine V.A.D. nurses, an Army sergeant-major, and a male corporal occupational therapist. Medical attention is provided by a local practitioner, who is on call to deal with any minor ailment or emergency, and a weekly visit is paid by the Army Specialist Dermatologist. During the first 11 months that the hospital was open, Lieut.-Col. F. F. Hellier, R.A.M.C., supervised the treatment and rehabilitation, and I have visited the hospital for the past year.

It might be thought, "Why all this fuss about skin patients? They are the last people to need rehabilitation." The subject cannot be dismissed so lightly, and it is only by seeing the patients in the mass, coming as they do from all parts of the country, that one realizes how great is the need of a breathing-space before returning to their former work. One medical officer writes in his case notes: "Skin intact but vulnerable," and this is a very true statement in many instances. The skin itself may be in a tender state and need a little more time to harden off. The patient's spirits are often at a low ebb after an unsightly and depressing skin disease.

The provision of a convalescent hospital expressly designed to cater for subjects of skin disease supplies a long-felt need. It makes possible a study on a group basis of problems associated with rehabilitation and improves the morale of the sufferers. Many of our convalescent hospitals to-day refuse to admit skin patients. This attitude is to be deplored, but this fact strengthens the case for a separate institution to provide sympathetic and expert care for dermatological convalescents.

The psychiatric aspects of rehabilitation of patients with skin disease deserve more detailed study than can be given by the ordinary medical officer. It is obvious that a considerable number of dermatological patients are poorly adjusted from a psychological point of view, and this was borne out recently by Lieut.-Col. E. Miller, R.A.M.C., who visited Ragley Hall and formed the opinion that some of the patients displayed anxiety in varying degree and others were of a pronounced self-centred disposition. In a recent paper he suggests that emotional and intellectual factors should be investigated in those with different types of skin disease, and a survey of the social background of patients, including a genetic study, undertaken. In this way the patient may be helped towards a more complete adjustment to social and economic needs.

Some skin treatment is still necessary for many of those who come for convalescence, and their reaction to graduated exercise must be noted. Special problems have to be solved in deciding whether a man may resume his former occupation; if he may not, then a suitable trade must be found and arrangements made for him along new lines. In all this the utmost tact and sympathy are necessary; the selection of staff for dermatological rehabilitation therefore demands more than ordinary care if a high percentage of success is to be attained.

Procedure at Ragley Hall

It had been noticed that on their arrival at Ragley Hall some of the patients were apprehensive as to what they had come to, but often their fears were allayed when told that this hospital was for skin patients alone. A welcome from the Matron, and an interview with the occupational therapist to find out the inclinations of the new patient towards handiwork, begin the first day. There must be rules when 75 men live together, and certain fatigues have to be performed to help in the smooth working of the hospital; but restrictions are minimal, and careful selection of duties is made, so that no one with tender hands is asked to do any washing or cleaning if he might thereby suffer.

Woodwork, leatherwork, or needlework might be the patient's choice for his handicraft, and it is found in practice that the men become so interested that they spend considerably more time than the two hours allotted daily for this task. Many high-class toys, handbags, wallets, embroidered fire-screens, and fancy belts have been sent to the Red Cross sales or to the patients' homes. Entertainments are held on an average three nights a week and a well-stocked library is kept. Opportunity is given for men to take language or other educational courses, and a lecture is given regularly each week by the Army education authorities. Fresh air is a necessity after confinement to hospital, and the patients have large grounds to roam in and help on farms in the summer season.

After a few weeks the medical officer can estimate the prospects of ultimate recovery, and the disposal of each patient can be decided. No patient leaves hospital without a note

to his new unit stating his capacity for work and laying down any further lines of treatment which may be thought necessary.

In this way many men have been saved for the Army by rehabilitation, and a careful follow-up system has been instituted to determine the subsequent fate of the men who have passed through Ragley Hall. During two years' work 800 men have been admitted, and, of these, 584 have been returned to duty and 216 had to be discharged from the Service. Of the latter, 100 replied to a follow-up questionary, and it was found that only three were entirely free from all symptoms and needed no treatment whatever. Five out of the hundred were unemployed.

Types of skin disease which benefit from rehabilitation are: (1) seborrhoeic dermatitis—cases of moderate severity and duration; (2) eczema of mild type; (3) impetigo—severe cases in the stage of recovery; (4) pyodermatitis with debility; (5) furunculosis; (6) sulphonamide dermatitis; (7) lichen planus (needing psychological readjustment).

Seborrhoeic Dermatitis

Cases of this skin disease increased greatly in number during the war years and were seen in various forms, ranging from severe seborrhoea of the scalp alone to generalized exfoliative dermatitis. Seborrhoea of the scalp is found as a complication in cases of acne, impetigo, and eczematous eruptions, and unless due recognition of this factor is noted results of treatment of these three diseases will be only partially successful. One other eruption which is resistant to treatment is otitis externa, and this is almost always associated with definite seborrhoea of the scalp, which must be treated vigorously before the ear condition can be expected to heal.

The cardinal rules in the treatment of the scalp are: (*a*) keep the hair short; (*b*) wash the scalp on alternate days under supervision, using liquid or soft soap; (*c*) apply to the scalp an ointment such as:

℞
Liq. picis carb. ..... 30 m.
Acid. salicyl. }
Acid. benzoic. } ..... āā 10 gr.
Sulph. praecip. }
Emulsion base ..... ad 1 oz.

This ointment to be massaged into the scalp itself by a nurse or orderly and not given to the patient to apply.

Seborrhoeic dermatitis in one or other of its forms is probably the most common of all skin diseases seen in an out-patient department at military hospitals to-day. It is common in the A.T.S. as a dry scaly eruption on face, neck, arms, and trunk, with profuse seborrhoea of the scalp, and among men in the Forces as a papular rash between the shoulder-blades and on the chest which causes marked irritation and is made worse by sweating, heat, severe exercise, and the wearing of thick woollen underwear. Another type of eruption that is becoming more frequent is a generalized papular rash with oval squamous lesions almost identical with those of pityriasis rosea. This is seen in patients of nervous temperament, and if such a condition is incorrectly treated exfoliative dermatitis may follow and rehabilitation may be necessary.

The following ointment has been uniformly successful in the papular and squamous varieties of seborrhoeic dermatitis on trunk and limbs and is much superior to the more popular sulphur and salicylic ointment. It is smeared on gently twice daily.

℞
Liq. picis carb. }
Calamine }
Zinc. oxid. } ..... āā 1 dr.
Ol. arachis }
Paraffin. molle ..... ad 1 oz.

Eczema; Impetigo; Pyodermatitis; Furunculosis

Eczema is often of constitutional origin; and each case must be considered from this point of view. Once established it will persist and be aggravated by many external irritants. Rehabilitation must include an attempt to provide conditions which will alleviate the severe irritation, and sedatives should be given in full dosage during the phase of recovery. Suitable occupation is all-important and a change of work is often found necessary, so that clerical or light work is substituted for more exposed and arduous conditions of service. Correct underwear and clothing may have to be supplied and limitations imposed on bathing of the skin.

It is a short-sighted policy to return the patient with severe impetigo to full work as soon as his lesions have apparently healed, for he will almost certainly break down and new lesions develop. He has to be admitted to hospital again, whereas a short spell of rehabilitation would have prevented relapse, thus saving time in the long run.

A severe degree of pyodermatitis is often accompanied by scabies, and the latter condition must be looked for with care. If it is not found, then the patient may have poorer powers of resistance to local infection with skin organisms than the average, and time must be allowed for him to build up an immunity. Correct general therapeutic measures should be given as well as local antiseptic dressings. A diet containing a liberal quantity of vitamins should be prescribed, and the addition of food yeast has been found beneficial.

A number of patients with severe and protracted outbreaks of boils have been sent for rehabilitation; a change of surroundings, with continuation of special treatments such as ultra-violet light, vaccine injections, and autohaemotherapy, has enabled men to return to work within a reasonable period. Here again liberal vitamins and the issue of cotton underwear have helped in recovery.

Sulphonamide Dermatitis

Rehabilitation of this class of patient has been of great interest. Some patients have been desensitized to sulphonamides before admission; others have had to be desensitized either to the drug or to light by graduated exposure. In general this type of case does not do very well in the Army, as there is a great hazard in the wearing of khaki overcoat, battle dress, and shirt; and only a certain number of cases of moderate or slight degree are found suitable for the Service after tests in their uniform have been applied. It is probable, from study of follow-up data, that most sufferers revert to normal in the course of time, and if they show no reaction or only a very slight papular rash after a khaki-tolerance test they may be considered suitable for rehabilitation.

Lichen Planus

This chronic eruption is often found in patients with some degree of anxiety state, which must be corrected before work can be resumed and the rash persuaded to regress. The help of a psychiatrist is needed, and a considerable period of convalescence should be allowed. An atmosphere conducive to freedom from worry is usually to be found at a rehabilitation centre, and the patient will generally make a steady recovery. Investigation of the patient's private affairs and continued reassurance are necessary for success.

Conclusion

Many types of skin disease apart from those of a chronic widespread intractable nature will benefit from rehabilitation, and much good work can be done by showing the patient how to live with his disease and apply his treatment correctly. It has been found that facilities for efficient hair-cutting, shampooing, and hair-drying are essential in the rehabilitation centre, and there must be a generous number of baths. Many men have been helped to continue their Army duties by the issue of cotton underwear, and it is considered that the question of suitable clothing for people with sensitive skins needs further scientific investigation.

The above study has shown that (*a*) controlled rehabilitation in Service patients suffering from skin disease is most necessary before they are returned to duty; (*b*) the psychological background of dermatological patients should be the subject of investigation by experts; (*c*) the direction into suitable occupations of men and women who have skin disease is worthy of further study by labour managers; (*d*) rehabilitation of patients with skin disease should be introduced for the civil population.

I wish to thank Brig. R. M. B. MacKenna, Consulting Dermatologist to the Army, for his assistance in the compilation of this paper.

Reference

Miller, E. (1945). *J. R.A.M.C.*, **84**, 54.

MEDICAL TOPICS AT ASLIB

At the 20th annual conference of A.S.L.I.B. (Association of Special Libraries and Information Bureaux), held in London on Sept. 15 and 16 under the chairmanship of Sir FREDERIC KENYON, a number of papers were presented of interest to hospital administrators, medical librarians, and scientific research workers.

In his opening paper, "Information Service as an Essential Factor in the Progress of Science," Prof. J. D. BERNAL, F.R.S., prophesying that scientific periodical literature at its present rate of output was bound to come to an end, made a novel and provocative suggestion: a prospective author would submit his manuscript to a particular learned society of which he was a member, and the society would then take steps to have his paper published and distributed by a national centre to interested subscribers. The scientific periodical literature of the future would thus consist of individual papers of uniform format, which could be suitably bound according to subject. This scheme, which aims at supplying scientific workers with their absolute minimum requirements, would mean the disappearance from the market of many well-established and familiar journals.

Mr. C. E. A. BEDWELL, formerly chairman of the Guild of Hospital Librarians, described the library for hospital patients as an extension of the home services provided by the public libraries. The patient is a ratepayer in a hospital bed instead of in his own home. Reading has a place in the rehabilitation of patients, and the library should be an integral part of the hospital work. Unfortunately accommodation has not kept pace with the development of the service, and in a great many hospitals in this country a poky little hole without proper shelving or furniture is by an abuse of the English language called a library. Library quarters in a 800 to 1,000 bedded hospital require at least three rooms: one to contain the collection of about 5,000 books and microfilms and seating accommodation for some twenty patients; an office for the library staff; an annexe for trolleys and microfilm projectors; and possibly a room for book repairing—an admirable form of occupational therapy.

Mrs. LUCIA MOHOLY, director of the Aslib Microfilm Service at the Victoria and Albert Museum, described the U.S.A. type of microfilm projector which projects an image of the book on the ceiling for the benefit of a bedridden patient who is not allowed to sit up. While the film has to be fitted into the projector by a nurse or librarian, the patient can operate the machine by himself—with his hands, feet, or slight movement of the head. One or two pages can be shown on the screen at the same time, and pages may be turned forwards as well as backwards. The approximate cost of a projector—the first machine is expected in this country from the U.S.A. next month—will be 100 dollars, and the service will be operated by a non-profit organization in which Aslib will be represented. The speaker mentioned that U.S. publishers have agreed to have their books microfilmed free of royalties for hospital cases and for serious cases nursed outside hospitals. Microfilms have also been used successfully in the education of children afflicted with infantile paralysis. Whether, as was suggested in the discussion, the attractions of the microfilm service might encourage the *malade imaginaire* remains to be seen.

PUBLIC HEALTH TRAINING IN INDIA

A short report has reached us of the work done in the All-India Institute of Hygiene and Public Health, Calcutta, during the years of the war. This Institute was established in 1933, with six sections—namely, public health administration, vital statistics and epidemiology, malariology and rural hygiene, biochemistry and nutrition, maternity and child life, and public health engineering. All these, except the last, functioned from the beginning. The section of public health engineering started in 1938 with the teaching of D.P.H. students as its main interest, but also with research as one of its activities, especially on water and river pollution problems. In 1938 the syllabus for the D.P.H. course as taught at the Institution was found to be out of date as compared with those followed at teaching institutions in Europe and America. Accordingly the curriculum has been revised in keeping with modern demands, especially with a view to the requirements of health officers in charge of rural and urban communities in India, and the amount of teaching given on filterable virus diseases and entomology and on nutrition has been largely extended.

Since 1939 the Institute has been under the directorship of Dr. John B. Grant, who was assigned to that post by the Rockefeller Foundation. Of its wartime activities the most important has been the collection of blood and demonstration of the processing of blood serum through the Calcutta blood bank, which employs mobile collecting teams operating throughout Bengal and has an annual budget of about 3 lakhs of rupees (£22,500). The question of transferring the blood bank to the Provincial Government is now under consideration. Another wartime activity of the Institute has been the training of military personnel in antimalaria work. A large number of subjects are listed as representing problems which have been investigated during the period under review. These include epidemic dropsy, anaemia in pregnancy, tuberculosis, and leprosy surveys in certain districts, typhoid fever in Calcutta, and an inquiry into infant mortality in that city. With the prevalence of severe famine conditions in Bengal towards the close of 1943, the Institute was called upon to help the authorities in relief work. Sample surveys were conducted among destitutes to find out the incidence of infectious diseases such as malaria and dysentery, and help was given to hospital doctors in the treatment of advanced cases of starvation by providing suitable transfusion material.

Industrial hygiene is a subject almost wholly uncultivated in India, but the rapid industrialization of the country makes it imperative that steps should be taken at once to promote hygiene in factories and works, and one of the sections of the Institute is being provided with facilities, through the establishment of a chair, for investigating the problems of industrial hygiene peculiar to Indian conditions.

CHOICE OF WORK FOR HANDICAPPED CHILDREN

The coming into operation of the Disabled Persons (Employment) Act, 1944, and the setting up under that Act of a Register of Disabled Persons will improve the opportunities for suitable employment of disabled children. In order that advantage may be taken of the extended facilities so afforded, the Ministry of Labour and National Service is anxious that its local offices, juvenile employment bureaux, and in certain cases members of disablement advisory committees or of their panels should be furnished with up-to-date educational and medical records of all children leaving special schools and all those leaving other schools who suffer from a temporary or permanent disability which may restrict their choice of employment. It has been the practice of a number of local education authorities to furnish reports on the lines of Forms E.D. 210 and E.D. 211. This latter form is in accordance with the suggestions made in Administrative Memorandum No. 137, dated Sept. 16, 1935. The Ministry of Education hopes that authorities and governing bodies and the managers of voluntary special schools will be prepared to supply information on the lines indicated in these forms in the case of children leaving their schools. The information on these forms should not be communicated to prospective employers.

Where the school medical officer is of opinion that the child may be eligible for registration under the Disabled Persons Employment Act it is suggested that in place of Form E.D. 211 the fuller Form E.D. 211 D.P. should be completed. This form would apply in particular to children leaving certain types of special schools, such as schools for blind, deaf, physically handicapped, and epileptic children, but may also be suitable for a number of those who have been educated in ordinary schools. While the medical officer may wish to complete this form, in the case of certain children, it should not be communicated to the local office of the Ministry of Labour, the juvenile employment bureau, or members of a disablement advisory committee unless the parent has signed the statement of consent included in the form.

Parents might well be told of the improved possibilities of ordinary employment for handicapped persons afforded by the Act, and of the increased facilities for sheltered employment which will be available to registered disabled persons only; and authorities, governing bodies, and managers will no doubt give such advice as they can to enable the parents to judge whether they should sign the statement. Application for Form E.D. 211 D.P., and for additional copies of the other forms, should be addressed to the local office of the Ministry of Labour and National Service.

Reports of Societies

PENICILLIN IN OPHTHALMOLOGY

The session of the Section of Ophthalmology of the Royal Society of Medicine opened on Oct. 11, Mr. P. E. H. ADAMS in the chair, with a discussion introduced by Prof. ARNOLD SORSBY on penicillin in ophthalmology.

Prof. Sorsby said that penicillin was commonly regarded as a non-toxic substance and a readily diffusible one. This, however, did not apply in its ophthalmological use, and the eye in relation to penicillin must be regarded as something distinct from the rest of the body. The absence of agreement among observers as to toleration for penicillin was not due to any looseness of observation, but mainly to the fact that samples of penicillin available at the moment were largely impure. Any assessment of tolerance at present was not an indication of tolerance to penicillin, but to samples of penicillin which, though standardized biologically, were not standardized from the point of view of purity.

It was possible to give penicillin in daily subconjunctival injections if the total dosage was not more than 500 or 600 units. He had observed only one case of allergic reaction after the use of penicillin; this was an infant with ophthalmia neonatorum in which the instillation of a drop of penicillin into each eye caused a severe oedema of the lids. A constant corneal bath produced a considerable penetration, and higher concentrations could be reached in the aqueous if ionization were also used, but the combined method was difficult in practice. With ointment it had not been found possible experimentally to obtain any adequate concentration of penicillin in the anterior chamber. If a massive dose were used—something quite beyond the clinical dose—a slight penetration was obtained, but the difficulties with all these procedures was to obtain adequate concentration. With subconjunctival injections a considerable concentration could be reached in the aqueous and vitreous; the drawback was the rapid excretion. By the end of three hours there was hardly any penicillin left in the anterior chamber, and, although the excretion was less rapid in the vitreous, the vitreous was extremely intolerant to injections of any type, and personally he would not inject more than 200 or 300 units. He hoped, however, that ophthalmologists would not be discouraged by these experimental observations. The experiments had taken place in normal eyes in experimental animals, and it did not follow that what applied to the normal eye applied to the inflamed eye. It might seem to be a simple matter to set up an experimental infection of the cornea and to test penicillin in the form of ointment or other method of application. The fact of the matter was that one could not produce a standard experimental lesion of the cornea for these tests. The position was rather different in infections of the anterior chamber, and there was experimental evidence that staphylococcal infection could be influenced by local applications of penicillin, though not in the form of drops.

Local Uses of Penicillin

As for the local uses of penicillin (Prof. Sorsby continued) there was now a voluminous literature. He himself mentioned 123 cases of ophthalmia neonatorum treated during the last year. With 500 units per c.cm., in 8 cases treated there were 3 successes; with 1,000 units, out of 7 cases, 4 successes; with 1,500 units, out of 9 cases, 5 successes; and with 2,500 units, out of 98 cases, 78 successes, 13 relapses, and 7 failures. Penicillin used locally was effective over the whole range of micro-organisms in ophthalmia neonatorum. Frequency as well as concentration was important. When penicillin was applied at intervals of 1 hour the results were good; at intervals of 1/2 hour they were better; at intervals of 5 minutes better still. For technical reasons it was not possible to institute the constant drip, and they were now instilling penicillin at intervals of 1 minute, and in most cases the condition was under control within half an hour.

Penicillin had been used in a variety of eye conditions. Perfectly good control of hypopyon ulcer had been obtained with penicillin drops. Trachoma was a condition in which one would not expect penicillin to be effective, seeing that it was a virus infection. But the virus of trachoma was of a special type, on the borderline between viruses and bacteria. He had tried penicillin in three cases of trachoma, but only one of these was a fresh case, and in this a good result was obtained very rapidly; within four days the typical appearance was lost. Unfortunately, in the other two cases, which were not fresh ones, the results were not at all striking. In iridocyclitis the results so far reported in the literature were not very significant. He had used penicillin in one case of sympathetic ophthalmia with no very encouraging result.

They had in penicillin a powerful agent but a limited one. It did not readily penetrate into the eye. It was of extreme value for local application in external infections. Unlike the sulphonamides, it was not inactivated by pus, and so could be used locally where the sulphonamides were failures. But in intra-ocular inflammation the sulphonamides had not proved very helpful, and penicillin was not likely to be helpful either.

Discussion

In a short discussion Mr. D. V. GIRI inquired whether ionization together with systemic application of penicillin had been used in septic inflammation of the eye, to which Prof. Sorsby replied that there was one successful case of post-operative infection reported in the literature. Prof. W. J. R. RIDDELL asked whether there was any reason why intravenous or intramuscular administration should not be made at such a high level as to ensure that it did penetrate the eye. Was it a question of the supply of penicillin or was there some technical objection? He considered that with modern ointment bases the soapy substance might cause eye damage. Mr. R. AFFLECK GREEVES said that the fact that penicillin did not penetrate the interior of the eye did not necessarily mean that it did not penetrate the tissues of the uveal sac. He quoted a case in which choroidal inflammation had quietened down after penicillin treatment. Mr. C. B. PURVIS mentioned a case of blepharitis in which the use of penicillin drops was not successful. Mr. H. SAVIN was not wholly convinced by the suggestion of specific action in trachoma; he had seen cases show similar improvement under diverse methods. Mr. R. LINDSAY REA said that he had always viewed with trepidation eye conditions in which teeth had to be removed at the same time as the eye treatment. It was useful to know that penicillin could be used during a dental operation.

Prof. SORSBY said that the relapses in his 123 cases of ophthalmia neonatorum amounted to about 18%—very similar to the percentage obtained in about 700 cases treated with sulphonamides. He agreed that even if penicillin did not penetrate into the interior of the eye it might still be of value. It was the ciliary bodies which held back the penicillin. He had no knowledge of what the concentration of penicillin in the ciliary bodies might be, but by analogy it should be extremely high, and it was likely that a good deal of the penicillin diffused back into the choroid, so that any choroidal infection would be influenced, though some observers had failed to obtain improvement in choroiditis. With regard to trachoma, he was not putting forward penicillin as a cure; only as a possibility to be explored.

Mr. H. C. Weston, in his presidential address at the opening of the new session of the Illuminating Engineering Society on Oct. 9, said that there had been a steady rise during the past 25 years in the values of illumination recommended for good lighting, and this had been facilitated by the falling running cost of artificial lighting. The upward trend of recommended standards of illumination was justified by accumulating evidence of the effects of conditions of lighting upon human efficiency. Personal efficiency was one of the indices of health. It was a great mistake to suppose that the meagre values of illumination available with artificial lighting in "the good old days" were adequate for comfort, health, and efficiency. Most of the fine work done by our forefathers—which so excited admiration—was done in daylight, and some of the old craft guilds prohibited night work because it was likely to be bad work. Many people wore spectacles, especially when at work, or they used magnifying glasses; and serious deterioration of vision seemed to have been the rule among those engaged in fine work. The new fluorescent lighting, which had proved such a boon to so many people in war factories and in other places where war service had to be done without any daylight, had not altogether escaped adverse criticism. Much of this was misconceived, and some was due to installation faults and neglect of maintenance. No satisfactory evidence that it had any ill effects upon the eyes had yet been brought forward. Bad or indifferent lighting was still widespread and caused much discomfort, strain, irritability, and loss of efficiency.

Correspondence

R.M.B.F. Christmas Gifts

Sir,—It is my privilege this year to ask you to submit to your readers the Christmas gifts appeal which for so many years has been issued by the late Sir Thomas Barlow and so generously supported by the medical press.

The Christmas gifts appeal has a special significance this year for, although peace has come, the material blessings which peace is supposed to bring are as yet merely dreams without substance. Food is monotonous and scarce; fuel is terribly short and its cost fantastic; clothing and prices generally are on the same high level; and even for those in fairly comfortable circumstances the outlook for the festive season is distinctly drab. Inevitably the burden of high prices and shortage falls most heavily on the poor, and for them there will be little money for celebrations of any sort this coming Christmas.

Last year there was collected a record sum of £1,817, which was distributed as follows: 483 of our people each received a Christmas gift of £3 at a cost of £1,449. In addition we were able to give 184 of our poorest a further sum of £2 each as a New Year's gift, costing £368. I feel that we must, if possible, do at least as much as last year, and indeed I am pleading for another record. If, for instance, contributions amounted to £2,000, we should be able to give everybody a Christmas gift of £4, and there would still be sufficient over to give some of the poorest an extra £1. Is it too much to ask? A very generous profession has already done so much, but my excuse is the hard times which still lie ahead. Believe me, the gratitude these Christmas gifts evoke is very great and often extremely moving.

Please send your donation, marked "Christmas Gifts," to the Secretary, Royal Medical Benevolent Fund, 1, Balliol House, Manor Fields, Putney, S.W.15, who will gratefully acknowledge it.—I am, etc.,

Arnold Lawson,
President, R.M.B.F.

Dangers of Gastroscopy

Sir,—About twelve months ago an elderly lady, upon whom I had carried out an apparently unsuccessful gastroscopy, developed fever, pain, and surgical emphysema of the neck within twelve hours of the examination. Fortunately she recovered after five days' intensive chemotherapy, but I had no doubt at all that an abrasion of the mucosa in the hypopharyngeal region had given rise to a dangerous mediastinitis. About this time Dr. Avery Jones wrote to me about his case, and at his suggestion inquiry of some other gastroscopists revealed the fact that most of them had had experience of this complication and that there had been five fatal cases. Unquestionably there are others; and Dr. Avery Jones and Dr. Fletcher are to be congratulated on bringing their cases to the notice of the profession (Sept. 29, p. 421).

Gastroscopy is no exception to other forms of endoscopy; it has its own dangers and technique, and patience and gentleness are needed in passing the instrument, especially when dealing with elderly ladies. There is no doubt that the most vulnerable part of the tract lies just above and below the post-cricoid sphincter. Most beginners are aware of the risk of perforating the pyramidal fossae of the hypopharynx, but not so many bear in mind the danger inherent in the prominent anterior curve of the cervical spine when the head is extended, as it must be to pass the gastroscope. The prominence of the spine pushes the posterior pharyngo-oesophageal wall so far forward that the tip of the gastroscope may impinge here with considerable pressure—especially if there is a spasm of the post-cricoid sphincter and the gastroscopist is in a hurry.

In passing the gastroscope the patient's head should be extended no further than is necessary, the operator's fingers should hook the back of the tongue firmly forward, receive the tip of the instrument between them, and carry it downwards, holding it all the time away from the posterior pharyngeal wall until it has passed well over the crest of the extended spine. It may be necessary to do this in stages, momentarily halting the progress of the end of the gastroscope down the pharynx in order to get a new grip with the finger-tips, the better to flex the gastroscope forward as it goes. Even when all appears easy the instrumentation must be done *slowly* because the mucosa may be dry from pre-operative scopolamine; for the same reason the *whole* of the rubber part of the instrument must be well lubricated, because a simple abrasion of an atrophic mucosa may be quite sufficient to give rise to a mediastinitis.

Notwithstanding all precautions, risk of mediastinal infection will continue to be a rare but definite possibility among the thousands of gastroscopies annually performed. For this reason I am generally averse to performing this examination on out-patients. Whenever possible the patient should spend the night before in hospital and be properly prepared the following morning. The quietude of the patient's mind that can be assured in this way makes the gastroscopy easier to perform and greatly diminishes the likelihood of spasm and abrasion of the hypopharyngeal sphincter. After the morning gastroscopy the patient should remain all day in hospital under observation until the evening, when he may be discharged if all is well. If there should be any suspicion of an oesophageal abrasion the patient should be retained in hospital on sulphonamides and penicillin lozenges. Success in treatment depends entirely on the promptness with which it is applied. I have practised this regime of 24-hour hospitalization and supervision for the last nine years at the London Hospital, and I feel it to be a reasonably adequate safeguard against both the incidence of, and the failure to detect, oesophageal lesions after gastroscopy.—I am, etc.,

London, W.1. Hermon Taylor.

Excision of Patella

Sir,—Fracture of the patella is not uncommon in the Services, and Mr. H. A. T. Fairbank's letter (July 14, p. 62) should be heeded by all who are called upon to deal with this injury. The ugly knee that follows excision is rarely a normally functioning knee, and no one should perform the operation unless to the infantryman he is prepared to say: "You are unlikely to become fit for full marching"; to the gunner, "You should not expect to be able to lift the heavy weights you used to do."

However, excision is the only possible treatment for the severely comminuted patella. In operating on such cases I would stress the importance, first, of removing every particle of bone and periosteum; and, secondly, of making every effort to close the rent in the capsule with synovial membrane. This may require the freeing of the suprapatellar pouch—a dissection to be performed carefully and without hurry. The tissue made available will permit accurate closure of the largest gap.—I am, etc.,

S.E.A.C. J. H. Milnes Walker.

Fenestration for Otosclerosis

Sir,—I agree with the writer of your leading article on fenestration for otosclerosis (Sept. 29, p. 430) that a full review of the subject is opportune, but I should like, if I may, to offer a few criticisms of his article.

It was, I think, unfortunate that a popular American monthly, with a circulation of several millions in the English-speaking world, should have published a highly coloured and optimistic article on the fenestration operation as a cure for deafness a few months ago. I had several copies of this sent to me, with inquiries, while I was still in the Army, and since my release no week has passed without further inquiries about the desirability of this operation or even the possibility of proceeding to America to have it performed. Your leader-writer has, I am afraid, done little to dispel the results of this indiscriminate publicity, or to clarify the present situation with a view to helping the general practitioner to advise his patients on the subject. He speaks of "a technique which promises to give 80% of good results," then quotes Shambaugh as claiming "a 90% chance of lasting improvement and a 70% chance that this improvement will equal or surpass that obtained by a hearing aid," and goes on to say, apparently in his own opinion, that "it may be accepted that rather less than half (probably about one-third) of the patients treated by this technique have gained real benefit," and warns that "an exact percentage of successful results is not easy to estimate."

As it is evidently difficult to evaluate the indications for operation and the results of the various American authors quoted by your leader-writer, it is all the more surprising that he has altogether neglected the work done in this country. I do not refer to the sporadic labyrinthine operations by various otologists following Jenkins and Holmgren some years ago, but to the report of a series of 66 cases by Mr. Simson Hall of Edinburgh at a meeting of the Section of Otology of the Royal Society of Medicine in March, 1944, followed by a well-informed and animated discussion (*Proc. roy. Soc. Med.*, Oct., 1944, **37**, 737; *J. Laryng. Otol.*, July, 1944, **59**, 255). Mr. Simson Hall pointed out that selection of cases had a great deal to do with the results, and that there were the following common characteristics in those showing improvement: the patients were young, usually under 30; deafness was not extreme; there was no sign or history of middle-ear disease, and no nerve deafness. He considered that lack of appreciation of the upper tones by bone conduction had proved a contra-indication to operation, and he now refused such patients for operation. Mr. Simson Hall had had 66 cases in six years, and after eliminating his earliest cases because of faults in technique, and his latest cases because of too short a period of observation, he arrived at an improvement in 51%, but considered that figure of but little practical value; of the cases operated on prior to 1940 36% had retained their improvement in hearing; he had one death, apparently due to an idiosyncrasy to morphine.

The contrast, of course, is marked with the 1,000 fenestration operations for otosclerosis in seven years by Dr. Lempert of New York—more cases of otosclerosis than most European otologists of experience are accustomed to diagnose in a lifetime; 74.4% of Lempert's cases showed what he calls "complete or partial rehabilitation for social and economic contacts," but no fewer than 616 of his cases were operated upon less than three years ago (*Arch. Otolaryng.*, Jan., 1945, **41**, 1). Dr. C. E. Kinney, in a recent review of the subject (*Laryngoscope*, March, 1945, **55**, 117), based on a personal series of 32 cases and a careful critical estimation of the literature, though stating that in his opinion the operation is "a distinct advance in the therapy of the disease," points out the difficulty in selecting cases, the difficulty in evaluation of results and in technique, and concludes that "the claiming of 85 to 90% of successful results is unwarranted at this time." Yet when one has witnessed (as I have done in Mr. Simson Hall's clinic) the drama of seeing the membranous labyrinth exposed under local analgesia, and a previously deaf patient eagerly repeating the aural surgeon's whisper from the farthest corner of the operating-theatre, one admits that it must be difficult for the surgeon to retain the sobriety of his judgment and to damp down his enthusiasm for several years, until the end-result of the operation can be properly evaluated.

As I have spent the last five years—the most important period in the development of this operation—in the Army, I need hardly say that I have had no personal experience of it, nor am I likely to have until I get more certain information about the selection of cases, a more riskless technique, and a more definite promise of improvement in hearing. If my opinion were asked, I could not conscientiously advise a patient suffering from otosclerosis to-day to undergo this operation without explaining the uncertainty of improvement and the undoubted risks that accompany any operation on the labyrinth. Far be it from me to discourage any of my colleagues in their researches to relieve deafness by operation, but it is as wrong to encourage young otologists to dash into a fascinating technique without careful and prolonged training in the surgery of the labyrinth as it is to raise the hopes of the deaf by ill-judged optimism.—I am, etc.,

London, W.1. R. Scott Stevenson.

Treatment of Denuded External Skull Table

Sir,—The interesting account of this subject by Majors P. Clarkson and J. Schorstein (Sept. 29, p. 422), and the excellence of the result, call to mind a somewhat similar case. Although the conditions differed materially in that there was no interval before grafting and this was done to the bare outer table and not to the diploe, the blood supply to the skull is so good that evidently success may be expected by any clean method.

A man of 70 years was admitted to the Royal Infirmary, Aberdeen, in 1912 under Prof. Marnoch with a horribly offensive, ulcerated epithelioma of the whole of the right pinna, destruction of the tympanum, extensive glandular involvement, and severe pain and sleeplessness. There was no sign of intracranial growth. The external carotid was ligated at its origin, and a wide block removal of all the affected structures, including the parotid, facial nerve, and internal jugular vein, was carried out down to the skull, from which the periosteum was stripped. The mass measured 6 inches vertically and 7 inches horizontally. This area was immediately and completely covered with autogenous Thiersch grafts, most of them being applied to the bare squame and parietal, which did not bleed. Every graft took completely. There was always a small sero-purulent discharge with a little wax from the bony meatus and complete facial paralysis, but no other surgical imperfection developed and the eye was preserved. The graft remained intact and without scaling or ulceration. A small "deer-stalker" flap from the cap was worn to mask the deformity. The condition was said to have begun where the spectacle frame irritated the skin. So far as I can remember the patient lived some five years in great comfort and with no sign of recurrence. He frequently came for examination. He died of bronchitis.

The grafting of skin direct to bare bone was new to me at the time and was tried because it was the obvious thing to do. Had it failed a plastic operation could have been done and the deformity filled up. Beyond an occasional opportunity to prevent scarring in temporary amputation stumps no further trials of the method have been made. A good application of the method would be in cases of scalping by machinery. The saving of suffering and time would be enormous, and it appears that a wig would not cause the graft to scale or ulcerate.—I am, etc.,

London, W.1. G. H. Colt.

Treatment of Duodenal Ulcer

Sir,—As one whose lot it has been to see and treat very large numbers of cases of duodenal ulcer during the past fifteen years, I have at various times tried what Sir Adolphe Abrahams (Oct. 6, p. 473) calls "this, that, or the other 'cure' for duodenal ulceration as an incident in ambulatory treatment." As a result of my experience I am convinced that there is no "short cut" to cure, and that the most successful and lasting results are obtained by the orthodox diet, alkalis, and supplementary vitamins B_1 and C. I can fully endorse his statement that "almost incredible remissions are a familiar experience."

It has to be recognized that there is, what I called many years ago, such a thing as a "duodenal diathesis," though that is not to say that every case of duodenal ulcer necessarily presents the stigmata in obvious form. For this reason I make it a rule to warn all "recovered" cases—i.e., when symptom-free with radiologically confirmed healing—of the possibility, even the probability, of relapse; of the importance of adhering to a "healed ulcer" regime; and of the need for a periodic survey even in the absence of symptoms. I would particularly emphasize the latter.—I am, etc.,

Brookwood. H. M. Stanley Turner.

Sciatic "Neuritis"

Sir,—I was much interested in the article on sciatic "neuritis" by Dr. Holmes and Mr. Sworn (Sept. 15, p. 350). They say: "It is now generally accepted that the commonest cause of chronic pain in the distribution of the lumbo-sacral nerve roots is a rupture of a lumbar intervertebral disk, but there has been much discussion during the past few years between the exponents of the 'disk' and 'neuritis' theories of the causation of lumbo-sacral root pain. . . . Symonds (1943) has stated that 'the vision of an inflamed and swollen sciatic nerve, so confidently stated to be the cause of the syndrome in question, has never yet been granted to human eyes.'"

They describe three cases in which there had been severe and continuous sciatic pain for a considerable time before operation, but in neither of these was there any sign of a swollen disk or of any mechanical pressure on the nerve roots. In one case the swelling of the nerve was so great that the presence of a neurofibroma was suspected, but on incision it was found to be swollen and oedematous. All these patients had very severe pain for a week or more after the operations, which gradually subsided, and they have been quite well since. One, a miner, was able to return to full work in the mine. The authors admit

that at present they cannot distinguish cases of sciatic neuritis from those with a ruptured disk, without an operation, but for the moment must be content with having seen a lesion which Symonds declares "has not yet been granted to human eyes."

I can have little doubt that if instead of an immediate surgical procedure oxygen were injected subcutaneously as described by Drs. J. P. Martin and James Collier and mentioned in my letter in the *Journal* of Feb. 12, 1944 (p. 230), not only would there be no pain at the time, but the severe after-pain lasting for a week or two after the operation would be entirely avoided, and the sciatic neuritis might even be entirely and permanently cured. The diagnosis of sciatic neuritis should present no difficulty. As Dr. Collier says in his article in Price's *Textbook of Medicine*, third edition, page 1654, there is tenderness on pressure over the nerve at the back of the thigh, and severe pain is caused by stretching the nerve, by extending the knee with the thigh flexed; and by various other simple methods. It may well be, now that peace is once more restored, sciatic neuritis will be recognized by all and its treatment by injection of oxygen may again be restored to favour.—I am, etc.,

Worthing. HERBERT H. BROWN.

Stovaine Anaesthesia

SIR,—Mr. K. E. Madan (Oct. 6, p. 474) has raised a point regarding stovaine which should by now be generally known. It is a pity that Chaput's solution of stovaine (10%) in saline was called the "light" solution, although it is undoubtedly hyperbaric, and with suitable posture of the patient can be used for giving either a high or low spinal anaesthetic. The correct facts regarding this solution have been presented in all three editions of *Principles and Practice of Rectal Surgery* (1932, 1937, 1945).—I am, etc.,

London, W.1. W. B. GABRIEL.

Mode of Action of Vitamin D

SIR,—In the annotation on the above subject (Sept. 29, p. 432) one is left in doubt as to what rickets is considered to be and what exactly vitamin D does and how it does it. The impression created is that rickets is thought to be the result of calcium deficiency. Deficiency of available calcium, whether due to actual lack as such in the diet primarily or secondarily and paradoxically to an alkalosis brought about by the administration of considerable (but not excessive) amounts of calcium as the carbonate, gluconate, and the like, produces osteoporosis not rickets. Osteoporosis is also caused by the administration of calcium salts of the strong acids such as $CaCl_2$, in which case the underlying factor of causation is the appearance of acidosis.

Vitamin D has no effect in curing or preventing osteoporosis due to actual lack of calcium in the diet. As will be discussed immediately, its remedial action in the alkalotically produced variety is due to the production of acidosis with consequent increased formation of HCl in the gastric juice (to reduce the acidosis) and resultant increased absorption of calcium as $CaCl_2$, with its subsequent retention in the bones and tissues as the phosphate. I am not aware of the effect, if any, vitamin D has on the acidotic osteoporosis due to $CaCl_2$ administration. Calcium phosphate, however, as a source of calcium (but not of phosphate) can be added to the diet in considerable quantity without baneful effects.

The routine method for production of rickets in experimental animals is by the feeding of a diet containing an excessive amount of $CaCO_3$—e.g., the Steenbock and Black rachitogenic diet No. 2965, which contains 3% $CaCO_3$. The phosphates of the food as soon as they are liberated are thus precipitated in the intestine and so prevented from being absorbed, with the result that there is an actual phosphate deficiency in the tissues. Such a deficiency, of course, occurs also when there is an actual lack of phosphate in the diet. In both circumstances rickets is produced; and it has to be emphasized that this is a condition which, contrary to the view held by chemists who, many in number, have no inhibitions about carrying on investigations into abstruse problems in pathology, cannot possibly be differentiated from osteoporosis by means of *x* rays or chemical analysis but only by histological examination.

As I have pointed out on several occasions [1–7], the evidence goes to show that vitamin D, in curing rickets brought about by either of these two methods, does so by setting free phosphoric acid from its combination with glycerol, fatty acids, and choline in the phospho-lipins, thereby liberating it in its nascent state in the tissues and so anchoring calcium; and instituting an acidotic condition which, by increasing HCl in the gastric juice, facilitates the early absorption of calcium as $CaCl_2$ and so prevents it precipitating the phosphates set free later on from the food, which consequently are absorbed and metabolized.

As stated in the annotation, Cohn and Greenberg, using radioactive phosphorus, showed in 1939 that vitamin D aids the conversion of organic to inorganic phosphorus in bone—a result which appears to be confirmation of my view. It is necessary in the present context to add that on several occasions [8 9 10] I have pointed out that, since Sir Edward Mellanby did not produce rickets in his experimental dogs, he could not possibly have shown that cod-liver oil cured the disease; and further that, according to his own showing, cod-liver oil did not cure the condition he actually produced, which was, in fact, osteoporosis due to deficiency of calcium in the experimental diet. His suggestion at a later date that phytic acid precipitates calcium in the intestines, and so prevents its absorption, if entertainable at all, has relation to the production not of rickets, as he claims, but of osteoporosis.—I am, etc.,

Aberdeen. J. P. MCGOWAN.

REFERENCES

1 *British Medical Journal*, 1932, **2**, 599.
2 Ibid., 1933, **2**, 894.
3 Ibid., 1940, **1**, 462.
4 *Biochem. J.*, 1931, **25**, 1925.
5 Ibid., 1933, **27**, 943.
6 Ibid., 1934, **28**, 1503.
7 *Edinb. med. J.*, 1942, **49**, 190.
8 *British Medical Journal*, 1938, **1**, 94.
9 *Edinb. med. J.*, 1940, **47**, 204.
10 *British Medical Journal*, 1940, **2**, 398.

Nerve Injuries in Children

SIR,—I think that there must have been a misprint or clerical error in Mr. E. Hambly's letter (Oct. 6, p. 474) on this subject. He states that the median nerve recovered at the rate of 15 mm. a day. He examined the case at the sixth week, but at the quoted rate of growth from a lesion 1½ in. above the wrist the axons would take only 14 to 16 days to reach the tip of the third finger! Actually, a rate of 3 mm. a day would bring axons well on to the thenar eminence at 4 weeks. The "latent period" clearly has not been allowed for in these calculations, but, presumably, as the wrist was in plaster it was not possible to assess the time of onset of an advancing Tinel's sign, and it is therefore difficult to understand the figures given.

Admittedly lesions in children and lesions near the periphery recover rapidly, but even so I think 15 mm. a day would be found by Mr. Hambly, on reflection, to be erroneous.—I am, etc.,

Dunston-on-Tyne. F. G. St. CLAIR STRANGE.

SIR,—When claims are put forward that nerve suture has been followed by recovery at a phenomenal rate, it is well to consider whether there has been a mistake in the arithmetic. In the case cited by Mr. E. Hambly (Oct. 6, p. 474), claiming a rate of recovery of 15 mm. a day, the error is clear. "The lesion was 1½ in. [4 cm.] above the wrist." "Return of sensation occurred over the thenar eminence [in a child not more than 4 cm. below the wrist] at the sixth week." 8 cm. had been covered in six weeks, and the rate of recovery is therefore 80/42—just less than 2 mm. a day. This figure is confirmed by the further statement that "general sensory recovery had occurred by the twelfth week." Presumably this means recovery of sensibility as far as the terminal phalanges. In children aged 14 the distance between the wrist and the centre of the terminal phalanges averages approximately 14 cm. The rate of recovery must be 140+40/84, or 2.1 mm. a day.—I am, etc.,

Headington, Oxford. R. B. ZACHARY.

Longevity

SIR,—The investigation into longevity and old age in the Punjab by Dr. M. Yacob and Mr. S. Swaroop (Sept. 29, p. 433) prompts me to bring up certain material which I came across when looking up the literature on longevity in 1940.

It is admitted that there is "a considerable lack of accuracy in age records." As regards Thomas Parr, subject of a post-

mortem examination by William Harvey, Thoms and Young found no trace of his birth in diocesan records, and his age rests solely on his own assertions and those of his publicity agent—the poet John Taylor. As regards Henry Jenkins, his age is said to be authenticated by appearance in Chancery records 143 years before death, and by his disposition as a witness at the age of 157; but even official records do not exclude the possibility of the witness at 157 being the son of the man in the Chancery case. Most of these ages rest on parish records, which are liable to unintentional errors. Prof. Pearl cited an imaginary case in this connexion: a child was born, called John Smith, and was baptized, dying at the age of 15; in the same year the parents had another male child, called John in remembrance and never baptized; thus if the latter lived to 85 baptismal records would show him as 100.

I think it may be safely taken that ages greatly over 100 are not satisfactorily authenticated. The most reliable method—namely, compulsory registration of births—only came into force in England in 1837, and this discounts any present ages over 108 years. The ages quoted by Basilievitch and others giving the number of centenarians in the Abkhasian Autonomous Republic of Georgian S.S.R as 3,792 per million, as against 5 to 6 in Denmark, to quote one European country, are unbelievable. (The population on which this was based was 210,000, so that statistically these figures are misleading.) Even British census figures are misleading, as really old people take a not unnatural pride in overstating their ages, for how else could the relative deficiency in persons aged 85 to 90 as compared with those over that age be explained in the 1911 census (King)? Working on the 1931 census figures, *not more* than 3.91 persons per million are centenarians, and it will be noted that this figure corresponds to 5.03 and 3.055 in 1891 and 1911 respectively, thus reflecting an increased accuracy in the census.

As regards increase in expectation of life as an assessment of longevity, it should be noted that, whilst expectation of life in England and Wales has increased by 15.7 years (17.73 in the case of females) for males between 1854 and 1922 *at birth*, this is mainly reflected in decreased infant mortality, the standardized death rates falling by only 14% for ages 85 upwards between 1841–50 and 1931–5, as against an overall fall of 55.6%. This means only an increase of months after the age of 40. The English figures also confirm throughout the "general experience that females have a longer duration of life than males," the standardized death rates being lower at all ages. This being so, it is rather dangerous to assess longevity in different countries on expectation-of-life figures. The table by Pearl (1930), based on percentages of population over 50 years of age, puts British India third for males (19.2%) but twenty-first for females (12.4%), the figures for England and Wales being 18.4% and 19.6% respectively. To some extent, therefore, this corroborates the poor prospect of female longevity in India.

It appears definite that the main factor in longevity is hereditary (Rush, 1849; Pearl, 1934); but it is unknown how this is transmitted. Environment may play some part, and formerly it was noted that rural life was more conducive to longevity; but the gulf has largely narrowed, and figures from the *Statistical Review* for 1938 were much the same as each other. Nevertheless, one would not expect the figures in Death Valley, California, to be so propitious as those for more amenable climes. Serious illness, if complete recovery occurs, does not appear to be a bar to longevity (Humphrey, 1889). Nearly all centenarians have been married, sometimes more than once, but what this means is doubtful except that it might be said that the long-livers enabled their natural instincts play and so led happy and contented lives. Similarly the contentment of tobacco and alcohol *in moderation* may lead to longevity (Pearl, 1928, 1938). Occupation is said to be a factor, as in the exposure of doctors to worry and infection, but Drinkwater found the average age of 2,113 eminent doctors eight years higher than the average age of the adult male population over 21; however, there are so many factors operative in a comparison of this nature that it is difficult to draw conclusions withstanding statistical criticism.

To sum up, therefore, we must hesitate before accepting extreme figures of alleged old age. There are plenty of these, and I, personally, collected records of 567 of them from various sources in Northumberland, Durham, and Yorkshire. Like Parr, they ranged up to 148 and lacked satisfactory confirmation. Patrick Wian, for example, vicar of Lesbury, lived to over 120, but there is no memorial or other records in his parish church, although he should have been buried in the chancel (*Monthly Chronicle*, 1887). Their stories are interesting for the alleged return of various faculties after previous deterioration; the cutting of new teeth and their various eccentricities. There is the story of Simon Ellerton, who reached 104, and often walked to London (!), carrying back on his head the most suitable stone he could find wherewith to build a house. After his house was completed he continued to do so, telling inquirers "it was to keep his hat on." But these stories would fill a book. —I am, etc.,

Seaham. A. Forster.

References

Basilievitch, I., *et al.* (1938). *J. Med.*, Kiev, **8**, 7; quoted by *Lancet*, 1938, **2**, 927.
Drinkwater, H. (1914). *Practitioner*, **93**, 844.
Humphry, Sir Geo. (1889). *Old Age*, Cambridge.
King, W. G. (1911). *Census of England and Wales*, **7**, 46.
Monthly Chronicle, Newcastle, 1887.
Pearl, R. (1922). *Biology of Death*, Philadelphia.
—— (1928). *International Clinics*, **3**, 28.
—— (1930). In Cowdry, E. V., *Human Biology and Racial Welfare*, London.
—— (1934). *Human Biology*, **6**, 198; quoted by *Lancet*, 1934, **1**, 745.
—— (1938). *Science*, **87**, 216.
Rush, B. (1849). Medical Inquiries and Observations quoted by G. E. Day: *A Practical Treatise on Domestic Management and Most Important Diseases of Advanced Life*, London.
Thoms, W. J. (1873). *Human Longevity*, London.
Young, T. E. (1905). *On Centenarians and Duration of the Human Race*, London.

Estimation of E.S.R. at Sea

Sir,—No reference has been found in the literature to the erythrocyte sedimentation rate being used at sea. It was considered that this test might prove of greater value on board ship, where *x*-ray and other laboratory facilities were absent, than it does in hospitals ashore.

Before the test could be used for patients it was necessary to ascertain whether it could be carried out with reasonable accuracy in rough seas and at speeds where engine vibration was in evidence. A small series of healthy controls were tested under three conditions: (1) while the ship was alongside prior to sailing; (2) while steaming at high speed; and (3) in rough seas. These three estimates gave very similar results for each control, all being within normal limits. The investigation was subsequently carried out on patients.

To be of use at sea elaborate apparatus to overcome vibration, etc., is not applicable, and simplicity is essential. The method utilized was the following. The ordinary three-tube Westergren stand was used with the centre tube removed. A string was attached to the deck head at one end and a loop tied at the other. The stand with the two side tubes *in situ* was suspended by passing the loop of string over the middle metal clip so as to lie *at the junction of the metal clip and the upper cross-bar* of the stand. This resulted in the tubes remaining perfectly vertical, as tested by an improvised plumb-line. If the string is attached to the cross-bar itself the weight of the tubes and stand platform (both anterior to the cross-bar) prevents the tubes remaining absolutely perpendicular.—I am, etc.,

s.s. Orontes. H. M. Royds Jones.

Medical Aspects of Prisons

Sir,—Recent correspondence (July 21, p. 100; Aug. 18, p. 242) has again thrown some doubt on the adequacy of our prisons from the medical and hygienic standpoints. The recent Home Office report on *Prisons and Borstals* (1945) is of interest in this respect. A careful study of the report does not support Dr. Sass's statement (Sept. 1, p. 301) that in our prisons "sanitary conditions are not primitive," and substantiates much of "C.438's" evidence. Certain medical aspects of the report which are highly unsatisfactory have already been noted (*Lancet*, Aug. 4, p. 145)—e.g., the prison diet, probably deficient in vitamins; the primitive forms of punishment, which include a "restricted diet" (1 lb. bread per day with water); flogging, and the removal of a prisoner's mattress for 15 days; and the frequent failure to provide psychiatric treatment, even where this has been specifically recommended by a court.

Judging by the report certain other features of our penal system call for particular criticism from the psychiatric point of view. Thus, prisoners are locked up in their cells from

5.30 p.m. until 6.30 a.m. Again, to quote the report, "a large number of prisoners are employed in no more arduous or interesting work than sewing mailbags. . . . Many indeed are in prison just because of their mental and physical unfitness to earn a living. There can be no question here of teaching a trade." One of the punishments is confinement to the cell up to 28 days; "if violent or refractory" the prisoner "may be placed in the 'special cells,' which are sound-proof and fitted with unbreakable furniture." The latter statement suggests that the authorities may be far more concerned with the care of inanimate objects than with that of the unfortunate man suffering from a "prison psychosis." It is also stated that the conditions of a prison are such that the segregation of young prisoners from adults—and among the former the separation of convicted and unconvicted, first offenders, and recidivists—cannot be satisfactorily effected; and that the conditions for girls are "even more unsuitable." Further, the allocation of young delinquents to the various types of Borstal institutions appears to be somewhat arbitrarily carried out, according to "age, development, record, and general make-up," which, even to a skilled psychiatrist, would often be meaningless and misleading criteria for evaluating intelligence, ability, personality, psychopathology, etc.

At a time when public and authorities alike are expressing growing alarm at the high incidence of juvenile delinquency it must cause some concern to the medical profession that there has yet been so little official recognition (or, indeed, cognition) of the great advances which have been made in recent years by psychiatry in the understanding, treatment, and prevention of antisocial behaviour. Such obsolete methods are still applied to delinquents as would not to-day be tolerated in the treatment of physical, or other forms of mental, illness. In spite of undoubted progress in our penal methods in the past 50 years, the authorities still remain far behind contemporary psychiatric, educational, and sociological research in the field of criminology (not to mention dietetics). This remains true even if we take into consideration admitted administrative difficulties due to the obsolete prison buildings, their wartime overcrowding and understaffing, and the (presumably) temporary suspension of the Criminal Justice Bill introduced in 1938.

An adequate official reconsideration of these matters is all the more urgently required when we recall the recent decision of the Home Office to use Dartmoor (already condemned as a prison) as a Borstal institution. This has aroused the justifiable criticism that "no surroundings could be better calculated to develop in the minds of boys and young men confined there the sense that they are . . . an inferior caste . . . bound to make war on the community when liberty gives them the chance" (*Times*, Oct. 3). It is indeed somewhat paradoxical to read Mr. Herbert Morrison's introduction to the report, stating that the methods there described "seek not to repress but to reform, not to humiliate but to restore . . . an individual's share in what is good and valuable." The medical profession, and psychiatrists in particular, may perhaps think otherwise.—I am, etc.,

Warlingham Park Hospital, Surrey. R. H. Ahrenfeldt.

Diet in Morphine Addiction

Sir,—A striking feature of the case described by Drs. Charles Comerford and B. H. Kirman in their article on pellagra in a morphine addict (July 14, p. 44) is that, in spite of the patient's having been an addict for 12 years, "no morphine was given, and after the first day no sedatives . . ." yet in eleven days she "improved considerably and put on weight." In my experience long-standing drug-addiction cases require a certain amount of the drug of addiction during the first 24 to 48 hours of treatment or replacement of the drug by other sedatives, and in no circumstances have I ever known a patient to gain weight in the first two weeks. The marked physical restlessness and mental distress occasioned by deprivation of their drug militate against any increase in weight, even when insulin is used to produce an artificial appetite.

The patient's statement that she was not taking any morphine or alcohol 16 months after her discharge from hospital would be discredited by most physicians experienced in the management of drug-addiction cases, especially in the light of her failure to co-operate in out-patient treatment so far as vitamin concentrates and adequate diet were concerned. The craving for morphine is the most urgent of all, and it is extremely unlikely that a patient who was uncooperative in any respect would resist that urge. All drug addicts lose weight and yet remain remarkably free from intercurrent conditions, which may account for the infrequent association of drug addiction with other morbid complaints.

It is not quite clear from the account whether or not the patient received any treatment during her eleven days' sojourn at St. Alfege's Hospital. Intensive vitamin therapy has been found valuable in alleviating deprivation symptoms, but alone could scarcely account for the patient's "reasonable and co-operative" attitude. I venture to suggest that she remained a drug addict throughout her treatment, and that the improvement in her condition was essentially attributable to the correction of the prolonged dietetic deficiency.

Although narcotic drug addiction is not regarded, quantitatively, as a serious problem in the United Kingdom, individual cases are most resistant to permanent cure and merit scientific attention. It is likely that addiction is the result of personality inadequacies plus the action of the drug on the tissues, the latter leading to dietetic and vitamin deficiencies. If the patient described by Comerford and Kirman was in fact "cured" of her drug addiction the value of their contribution is additionally notable on that account, and tends to confirm the advantage of combining vitamin therapy with other measures in the treatment of drug addiction.—I am, etc.,

Poona. Ellis Stungo, Major, R.A.M.C.

Chin-Chin!

Sir,—I am glad that at last the question of overeating by our Western civilized races is now being exposed. Nearly 20 years ago an outstanding London physician found fault with my surplus weight. I asked him how I was to reduce it. He said, "Take more exercise." I do not care for violent exercise. I had occasion to take my wife to a London gynaecologist. He said she was over weight and must reduce. He said to her, "You must go on a course of thyroid." Some years later I had the good fortune to read W. J. Christie's book on *Surplus Fat and How to Reduce it*. I then discovered, to my intense surprise, that fat came from excess intake over output. My wife and I, with a little strength of will, have been able to control our weights down to reasonable proportions for the last 13 years. It has required comparatively little effort but a knowledge of the various foods which are fattening. I do not think it has required much sacrifice, because, for some unknown reason, once the weight has been reduced our metabolism seems to have altered and we are not quite so liable to put on weight, even though we do enjoy the good things of the table. When we want to reduce a little we simply eat less. When I checked back to my previous extravagances at the dining-table I found that for years I had regularly consumed, like so many of my friends, a daily allowance of 4,000 to 5,500 calories. One outstanding observation during the siege of Malta was the large number of doctors, once corpulent, who discovered that on the meagre siege ration scales their figures went right back to what they were as young medical students. It was remarkable how surprised they were that they had lost weight, and it seemed as if few realized that fat comes from food. Let any fat person count up the calories he or she has consumed regularly every day for some years back, and they will be surprised to find how much excess intake over output they have been consuming. I have never known a single person who had the necessary strength of will fail to reduce weight by eating less and eating more carefully.—I am, etc.,

"Four Chins."

Abdominal Nerve Block

Sir,—Abdominal nerve block will probably be more extensively used when the suprapubic region can be rendered insensible with greater certainty. Bishop, Carr, Anson, and Ashley (*Quarterly Bulletin, Northwestern University Medical School*, Chicago, 1943, Fall Quarter) have demonstrated the frequency of distal anastomoses between the nerves to the anterior abdominal wall. I have bilaterally dissected the

thoracic XII, ilio-hypogastric, and ilio-inguinal nerves on four unpreserved subjects within 24 hours of death. In every instance the nerves had a different pattern and position, even on the two sides of the same subject.

From these observations and from practical experience I conclude that to be certain of blocking the ilio-hypogastric and ilio-inguinal nerves it is necessary to infiltrate the internal oblique muscle from 3 to 4 cm. cephalad to 2 cm. caudad to the anterior superior iliac spine in a line 2 cm. medial to the spine, and that the infiltration must be continued laterally and cephalad through the internal oblique and transversalis muscle to a distance of 3 to 4 cm. from 3 to 4 cm. cephalad to 2 to 3 cm. caudad to the iliac crest. Such an infiltration requires 20 c.cm. 1 in 200 novocain (procaine), 1 in 2000 nupercaine, or 1 in 3000 amethocaine in 0.9% saline solution.

When the correct technique has been acquired the results will be found satisfactory. Speed comes with practice.—I am, etc.,

F. R. W. Kinkead Allen.

A Coincidence?

Sir,—The following two cases should be of interest, as I can find no reference in the literature to a relationship between history of twins and dextrocardia, and these two cases suggest a genetic relationship between the two. The cases were seen within two weeks of each other and were in no way related.

Case 1.—Male aged 44. On examination the apex beat was situated on the right side of the chest in the fifth interspace, 3½ in. from the mid-line. The lungs appeared normal and liver dullness was on the left side. Clinical diagnosis of dextrocardia with reversal of viscera was made and confirmed by *x*-ray examination of the chest and barium meal. The patient gave a history that his mother and father were each one of twins.

Case 2.—Female, aged 48, with practically similar findings also confirmed by *x*-ray examination and barium meal. She gave a history that: (1) grandmother and grandfather were each one of twins; (2) sister had twins; (3) uncle had three sets of twins.

These two cases were seen during routine examinations in general practice, and on account of the rarity of the condition the possibility of further cases is remote. It is interesting to note that the man had been left-handed from birth, while the woman was normal in this respect. The relationship here between dextrocardia and twins may be purely coincidental, but it is possible that some genetic factor may be involved.—I am, etc.,

Leamington Spa. Joseph C. Joyce.

Bitterness

Sir,—I strongly suspect that the "bitterness" felt between Service and non-Service medical men is by no means one-sided. It will take all the calm reasoning of many Major Stallards to eliminate the feeling which undoubtedly exists on the side of the E.M.S. It is for us, therefore, to be tolerant and sympathetic to the resentment of those who did not go to war. The man who wanted to go and for one reason or another was not allowed to do so feels envious of his more fortunate colleagues, while the man who "dodged the column" cannot easily forgive those who come back after years of precious experience of mankind and stirring events, with the horizon of their minds widened in a way that should fortify them against any and every adversity that they may encounter in the future.

To the disgruntled Service man I would say: "Knowing what has happened (and your father would have told you exactly the same story after the last war) and if you were put back to 1939 would you have done any differently? Of course you wouldn't; because you are you and not the man next door. Well, then, don't grumble about it. Just be sorry for the man who has been deprived of these rich experiences, either by misfortune or by the narrow ambitions of his own mind."

Dr. J. M. G. Wilson (Oct. 6, p. 477) seems to be suffering from a rather pathetic inferiority complex. Any man who is not the better for his life in one of the Services must have been blind to the world in which he moved. The worst if not the only defect that one notices at the end of a Service doctor's career is a slightly reduced capacity to suffer fools gladly. No doubt even this cardinal virtue will be restored to him after a month or two of the less pressing conditions and more evolved self-discipline imposed by civilian life.

I must protest also against what Squad. Ldr. J. L. Brown has to say about "time-wasting sanitation." Most of my time has been spent in doing surgery in the forward areas of North Africa and Italy, but for three months I had to battle with the problem of keeping a meagre force of French *maquis* "in the field" (literally) and free from epidemics. This force was totally untrained in the elements of hygiene, and as short of paper as it was of soap and even water. The inculcating of a few ideas on "time-wasting sanitation" served a more useful purpose in the war effort than the exhibition of technical surgical skill on a few individuals. Moreover the emphasis in medical practice of the future is more and more in this direction.—I am, etc.,

Geoffrey E. Parker,
Millbank, S.W. Major, R.A.M.C.

An Institute of Medical Photography

Sir,—Almost twenty years of hospital clinical portrait photography of the highest quality and usefulness, carried out by my colleague Dr A. H. Turton in the skin department of the Royal Victoria and West Hants Hospital, has taught us several lessons: that the patient should be photographed promptly, when first seen, before treatment has altered appearances; that this should be done by the practitioner himself who can reach the patient wherever he is, or by the member of the hospital staff who picks out patient and posture, rather than by any layman. Delay in taking the photograph only means that likely cases will slip away, or will not be seen again in the same interesting phase of the illness. It seems unlikely that a hospital authority would interest itself, whether in the matter of money or photographer or dark-room accommodation, in what is purely a professional concern, a diagnostic refinement, well-intentioned though it might be.

Mr. H. Mandiwall suggests (Oct. 6, p. 479) that the first thing needed is a competent photographer, and he is right: this is the crux of the whole matter. The clinical photographer must be self-trained; no snapshot is good or near enough; a suitable camera with portrait lens is a necessity, and a good light with screening for background desirable. To go along with each negative and print there must be a full caption; without this the value of the picture is vastly lessened.

In time coloured photography may come into vogue; but in skin patients particularly the coloured portrait of a well-executed tinted wax cast, though taking much art and time in production, can present a life-like image. Coloured prints of static moments, or kinetograph reproductions of movements in disease, require specialized knowledge and apparatus, and cost much in time and money; in any case they have a limited use only. For demonstration purposes, though colourless, the ordinary well-taken photograph and the lantern slide prepared from the negative are of the most use to the practitioner, and the photomicrograph to the pathologist; but only if captioned amply enough.

The best service to be rendered by an institute would be as a centre for London meetings and demonstrations in clinical photography, for storage of pooled negatives and prints that over-fill shelves and cupboards; but, most important of all, to issue a monthly or quarterly photographic journal to serve a similar purpose in medical journalism as the illustrated daily does in the newspaper world; run on business lines and for members of the profession and medical libraries, exclusively. Such a journal published under the aegis of the British Medical Association—to control policy, printing, and separate sale—would serve the purpose admirably.

In the past the pictorial art has been made too little use of in medical literature and practice; nor has the profession been well served in the matter by its journals. "The pictures for the page atone"; not to take and print a good photograph is to cast a pearl away. There is a saying which has truth in it: "Better a picture than a thousand words." A photograph is the next best thing to contemplating the patient in person; besides, seeing is believing, and might spare one a little laborious reading of wordy books and papers.—I am, etc.,

Bournemouth. S. Watson Smith.

"Reasons" for Scientific Research

SIR,—I was delighted to read the leading article on Pasteur (Sept. 29, p. 429), but two remarks need further elucidation. You ascribe the famous retort, "What is the use of a newborn baby?" to Benjamin Franklin. I have always understood it to have been uttered by Faraday when asked as to the use of his discovery of the relation between electricity and magnetism.

Your remark that there are "present-day scientists who would restrict scientific research to subjects of 'social value'" is also in need of some explaining. Who are these scientists and what is meant by "social value"? Surely all research is of value to human society, with the exception of certain researches conducted at Belsen and Buchenwald. When one discusses the value of research it is important to remember that research satisfies many values and needs, and that it is conducted for many purposes and reasons. I know of only two theories on the reasons for scientific research. One theory states that it is done solely to satisfy the curiosity of research workers and presumably those who finance them. The other states that research is of two kinds: practical and theoretical. The former is applied to problems arising out of the current practice of society; the latter kind of research is applied to the theoretical problems arising out of the practical problems and out of previous theoretical problems. Since the latter theory explains not only "why" research is done but also "what" research is done, it should be possible to decide between these theories by practical investigation. After all, human curiosity, being innate, is always the same.

I would be delighted to hear an explanation of the fact that we can spend £5,000,000,000 on the atomic bomb, while there is not even £1,000,000 a year for medical research—in terms of human curiosity and a disinterested passion for truth.—I am, etc.,

M. HAMILTON, Fl. Lieut.

Press Publicity

SIR,—It is rather a fortunate coincidence that concurrent with the letters from Sir Adolphe Abrahams and Mr. John Langdon-Davies on press publicity (Sept. 29, p. 444) appears a suggestion in the *World's Press News* by Mr. W. E. Dick, the editor of *Discovery*, that there should be formed a Guild of Science Writers. He suggests that membership of the guild would require the writer to hold some scientific qualification, a token to both the newspaper and the scientific worlds of the individual writer's competence to handle scientific subjects.

As a writer for many years on medical subjects I welcome both the suggestion of Mr. Dick and the letters of Sir Adolphe Abrahams and Mr. Langdon-Davies, especially the knowledgeable remarks of the latter. The trouble is that the average journalist is practically entirely ignorant of medical knowledge; indeed he often knows less than the young first-aider. He knows nothing of medical history; Harvey to him is probably a boxing exponent; he cannot distinguish between the sulphonamides and sulphanilamide and lumps them all under M & B. The result is that when he has to cover a medical story he cannot meet the doctor or surgeon on his own ground or talk the same language, and so chooses the sensational angle from scraps that he can understand to hide his lack of knowledge. Obviously the cure for this is not the responsibility of the medical profession; it is for editors and newspaper proprietors to see that a medical or scientific journalist is on their staff or at call to cover such stories.

Mr. Langdon-Davies's remark about the voluntary hospitals and publicity is much to the point. Where voluntary hospitals issue news items it is usually done by an appeals secretary, who is very seldom a trained journalist, with the result that many a genuine story of wide appeal is overlooked or badly handled—the loss being that of the hospital concerned and the voluntary system. The solution here is for every voluntary hospital to have a journalist as its press officer, not necessarily in a paid capacity, though any hospital that paid a good journalist a small retaining fee would repay itself many times over in the course of a year.—I am, etc.,

Fleet Street, E.C.4. NORMAN K. HARRISON.

Humanitarianism and the European Situation

SIR,—I have read with interest the letter from Lieut.-Col. Eric Townsend (Sept. 29, p. 446) regarding the present position in Europe, and I think that his suggestion about the care of European children is an excellent one, and one in which I, for my part, would be glad to assist, both as regards taking such a child and in any other way possible.—I am, etc.,

D. F. MCCARTHY,
Castlebar, Co. Mayo. County Medical Officer of Health.

SIR,—May I thank Lieut. Col. Townsend for writing, and you for publishing, his letter? I hope it will be the means of stimulating into action many who share his concern. It has had that effect on me, and I write to say that I will gladly take two children under the age of, say 10, as he suggests, for the period of one year, and I should prefer two German or Austrian children. I will also gladly take part in any committee or administrative work that might be necessary to give practical effect to the scheme.

I appreciate the difficulties in the way and quite see in advance arguments which may be used about the shortage of transport, the dangers from a psychological point of view of taking children away from their parents, etc. I would only suggest that there are unfortunately numberless children who have already lost their parents and their homes in Germany and elsewhere, and that it is to these children and others that we must look to safeguard the future peace of the world. Apart from the opportunity of saving them from the threat of death this coming winter, there would be the constructive opportunity of ensuring that they will be able to make the best possible contribution in the future.

As to transport, when it was a question of saving our own folk from Dunkirk we laughed at difficulties and they ceased to exist. We have only to care equally in this present desperate situation for the equivalent of the little ships and the individual homes to overcome the difficulties once more. Since Col. Townsend said that he was leaving for the Continent and had to leave the follow-up of his idea to someone else, so great is my own concern that if no one else takes the matter up may I ask that any others of your readers who are prepared to help should get into touch with me?—I am, etc.,

12, York Road, Harrogate. KATHLEEN RUTHERFORD.

Alien Doctors

SIR,—There is little doubt that most of your readers have been distressed by the recent letters vilifying alien doctors. It is, I hope, not priggishness that prompts me to put in a word on the other side; certainly it seems only fair play that this should occasionally be done. Further, repetition in print does have an effect on the reader, and the effect in this case is one that promises release of nastiness.

If we are a profession of gentlemen (otherwise we are surely not a profession) then we are ashamed of these lapses into bad manners. If we still have any British courage then we fear no competition, and even look forward to a test that may be as stimulating as it should be valuable to us and the community. If we are a nation of calculating shopkeepers then we recall the profit to British medicine from the work done here by those with foreign names.

It was Rome's proud boast to be a city where no man is an alien save the barbarian and the slave. Some 800 years before Sidonius made this claim, Hippocrates said the physician "must be a gentleman in character, and being this he must be grave and kind to all."—I am, etc.,

A. C. LENDRUM.

SIR,—Capt. John Nesfield (Oct. 6, p. 478), is afraid he will be out of a job when he gets back. The natural reaction is to find an outlet for this, and the most convenient scapegoat is the Jew, the favourite one in all countries, unfortunately, and in all ages. (What a wonderful role the Jews have, and why is this correspondence about alien doctors when what is meant is Jewish refugees, as most of them are Jewish?) This fear exists in spite of there being an acute shortage of doctors here, and even if all were released there would still not be enough

to man the new health scheme. As to numbers, Capt. Nesfield knows as much as I do, which isn't much. But I still believe in the kindness of the average Briton. If the numbers prove to be small (and there is at least as much reason to suppose this as to accept the wildly exaggerated statements of Capt. Nesfield), then I hope that Christian conscience and innate British decency will allow them to remain. And in spite of the fact that Irishmen volunteered during the war it still remains true that Eire was neutral throughout and that Jews as a people lost more proportionately than anyone else in the war, not excluding Russia.—I am, etc.,

Loxwood, Sussex. J. Vine.

Sir,—In spite of the many letters which have appeared in the *Journal* during the past year or so on the subject of alien doctors, I have failed to find a single remark with regard to the attitude of the British public towards these foreigners. Surely the people whose health has been entrusted to the alien doctors should have a say in the matter. The fact, as stated by Capt. Nesfield, that a very large number of them "are entrenched in and around Harley Street" seems to prove that they are more liked by their British patients than by their British colleagues, or shall I say they are disliked by their colleagues for this very reason?

I wonder whether Capt. Nesfield has taken the trouble to find out for himself the exact number of alien doctors serving in the Forces to call it disproportionate. I am one of those who volunteered early in the war and was enlisted in the Pioneer Corps. Building Nissen huts, guarding petrol dumps, and the like was our service until, in 1941, we were given an opportunity of medical employment as civilians and released from the Army. If the Government had wanted to use us as medical officers they could have directed us accordingly. Let us be quite frank. Is the "great anxiety felt by members of the profession over-seas about our presence in the U.K." solely due to our professional inefficiency, and is the demand for us to leave this country essential for the well-being of the population which we tried to serve best during the war? If not, what then is the reason for the great anxiety?

I am quite aware, together with some of the "strange importations" as we were once referred to, that we shall be made superfluous when most of the British Service doctors will have been released. But I should have expected at least a more academic approach to the problem by some of our British colleagues, even though we are only temporary members of this noble profession.—I am, etc.,

Macclesfield. M. Tannenbaum, M.D.Graz.

Sir,—Capt. Nesfield has complained of alien doctors "entrenched in and around Harley Street and all over London," and says that of these a disproportionately small number have featured in the Services during the war. Capt. Nesfield overlooks the fact that only a small number of these doctors could have joined up, as only a small number of the applications for naturalization had been granted. The naturalized doctors who were fit and of military age have joined the Services. Capt. Nesfield wants the alien doctors to be turned out. I wonder if he has ever spent a thought on the question as to where they should go. He will know that most of them are of Jewish extraction and that their parents, relatives, or friends have been slaughtered in Germany. How can they live or practise there? Palestine, the land promised to them by the Balfour Declaration as a National Home, is now more closely and heavily guarded than ever against their entry.

After obtaining a British qualification these doctors have built up their practice, facing difficulties and handicaps quite unknown to their British colleagues. A large percentage of their patients are refugees, who have been attended by them before they were driven out by the Nazis. The rights of those who have fought for this country must be recognized. These rights are not endangered by the presence of a few alien doctors in the Harley Street district. These Jewish doctors are not "entrenched" here like a hostile battalion, but long to become British and to work together with their British colleagues.—I am, etc.,

Ealing, W.5. H. Lytton.

*** This correspondence is now closed.—Ed., *B.M.J.*

Nutritional Macrocytic Anaemia

Sir,—In the leading article in which the pathogenesis of nutritional macrocytic anaemia is discussed (Oct. 13, p. 501), you refer to the work of Moore and his colleagues showing that the macrocytic anaemia of pellagrins is apparently due to lack of an extrinsic factor normally supplied by dietary protein. It may therefore be of interest to your readers to know that recently we have found that rats on a diet of methionine develop a macrocytic anaemia characterized by changes in the peripheral blood and in the bone marrow similar to those in human nutritional macrocytic anaemia (Glynn, Himsworth, and Neuberger, *Brit. J. exp. Path.*; in press). The development of this anaemia is not prevented by large supplements of cystine or of iron.—We are, etc.,

L. E. Glynn,
H. P. Himsworth,
University College Hospital Medical School, W.C.1.
A. Neuberger,
National Institute for Medical Research, N.W.3.

Obituary

R. CUNYNGHAM BROWN, C.B.E., M.D.

We regret to announce that Dr. R. Cunyngham Brown, late Commissioner of the Board of Control for England and Wales, died on Oct. 7 in retirement at Lymington, Hants.

Robert Cunyngham Brown was born in 1867, second son of the Rev. Robert Brown, of Paisley. He was educated at the Universities of Glasgow, Durham, and Frankfurt, graduating M.B., B.S. of Durham in 1890, and M.D. in 1898. After holding several resident hospital posts and three years in general practice, he worked under Carl Weigert in his neuropathological laboratory at Frankfurt a.M. This was followed by a year and a half at the National Hospital for the Paralysed and Epileptic, London, and a period as pathologist to the County Asylum, Chester. In 1899 Cunyngham Brown entered the Prison Service as deputy medical officer, and twelve years later was transferred to Scotland as Deputy Commissioner in Lunacy. In 1915 he was seconded to the R.A.M.C. with the temporary rank of major, and held the post of officer-in-charge of Strongburn-Woodside Military Hospital, Glasgow; he then went over-seas for service in Macedonia with the 37th British Hospital attached to the Serbian Army and as mental specialist to the Salonika Command. He was recalled to England and lent to the Ministry of National Service, and in 1919 was officially transferred to the Ministry of Pensions as Deputy Director-General of Medical Services, retiring in 1925. For the next six years he was a Commissioner at the Board of Control. His services in the war of 1914–18 were recognized by decorations from the Portuguese and Serbian Governments, and he was mentioned in dispatches.

Cunyngham Brown was an able and fluent writer, and everything he wrote or said or did bore the mark of enthusiasm and good will. He was joint author of a paper on diffuse encephalitis in *Brain* in 1892, wrote two clinical papers for the *Lancet*, and an article on the boarding-out of the insane in private dwellings for the *Journal of Mental Science*; he also prepared a report on the family care of the insane poor for the Royal Commission on the Care and Control of the Feeble-minded. He was a valued contributor to these columns for some years, and his occasional visits to the editorial office made one feel that a breath of genial sea air had come to London.

Dr. Alfred Cox writes:

Cunyngham Brown has been a friend of mine for nearly 60 years, though we met rarely. He was fellow student of mine at Newcastle-upon-Tyne and one of the most popular men in college. He had many advantages—he was a son of the manse, he had a good brain, a handsome and imposing presence, and a sweetness and generosity of disposition which characterized him all his life. In spite of the important official positions he held, always with credit and distinction, Brown was never much in the limelight. He went about the world a good deal on official missions and generally turned up at B.M.A. headquarters to report himself to me and the Editor. He was a favourite with everybody who knew him, and he had the happy family life he deserved until two of his sons failed to get away from Malaya when the Japs invaded it. I had heard nothing

of him since I was told that he and his wife were going East to look for them. I hope he was successful. His heart was as big as his body, and that is saying much.

K. W. M. writes:

Robert Cunyngham Brown numbered Dr. John Brown of *Rab and his Friends* among his forebears, and on his mother's side was a Shetlander. After a medical course in the Universities of Durham and Glasgow he went to Frankfort to study neurology, and on returning to Great Britain was appointed a clinical assistant at the Queen's Square Hospital, where he made a special study of tabes dorsalis. He went then into the Prison Medical Service, and in more than one institution was responsible for improvements in the treatment of inmates, more particularly in the provision of reasonable occupation and opportunities for education. His work in this respect left its mark on the whole prison service. He left H.M. Prison, Birmingham, in 1912 to become Deputy Commissioner in Lunacy for Scotland.

On the outbreak of war in 1914 he applied for military service, and was put in charge of Woodside and Springburn Military Hospitals, Glasgow. Thence he went in May, 1916, as captain, R.A.M.C., to Macedonia with the 37th General Hospital attached to the 1st Serbian Army; and after acting later as consultant in mental disease to the Salonika Command was recalled in 1918 to join the staff of the Ministry of National Service. He was transferred in this year to the Ministry of Pensions, where he filled the office of Deputy Director-General of Medical Services. His experience as a civil servant stood him in good stead in this important post, and it was due to his advice on policy that the system of Pensions Boards and other complicated machinery for dealing fairly with the returned soldier were set up. Ill-health traceable to severe dysentery in Macedonia compelled his retirement from the Ministry of Pensions in 1925, but he surprised his friends by a complete recovery, and was appointed a Commissioner on the Board of Control for England and Wales in 1927. He served in this office until his final retirement in 1933.

During the earlier part of his professional career he published several papers of recognized importance on neurological subjects; later he did much reviewing and article-writing for medical journals, particularly for the *British Medical Journal*, with whose late Editor, Sir Dawson Williams, he enjoyed a close friendship. In the various services to which he was attached—the Prison Medical Service, the Ministry of Pensions, and on the Board of Control—his influence was great and abiding, owing first to a far-reaching intelligence which enabled him to see the implications of problems, and particularly their implications for persons—for the prisoner, the pensioner, and the mentally afflicted—but above all to the complete integrity of his character. As to the latter, it is difficult to speak plainly. The more intimate his friends, the more they came to grasp his complete selflessness in every relationship into which he was brought by his work and by the other occupations of every day. He was repaid by the deep affection of many, the only coin which he valued, though it is certain that he never counted what was given him. During the last year he had to bear the affliction of almost total blindness from glaucoma, and a few days before his death he heard of that of his second son on the Bankok–Moulmein railway in 1943; but almost at the same time he also heard of the safety of his third son in Singapore, whose fate had been unknown since February, 1942. His wife, a daughter, and his third son survive him. A distinguished public servant, a great doctor, and a splendid friend.

A. S. writes:

The words "a great gentleman" are not lightly to be used, but none who knew "C. B." would question his possession of all that they imply. Tall, handsome, debonair, his physical presence impressed, whilst his voice and greeting showed an immediate personal interest, whoever you might be. This initial charm did not fade as one came to know him better; it was a true expression of the man. He could indeed be sharp and peremptory if need be; he could be unreasonable or inconsequential, but he was never small-minded or self-seeking. He believed the best of his fellow-men, and evoked the best from them.

As Deputy to the Director-General of Medical Services of the Ministry of Pensions, Sir Lisle Webb (whose death has strangely occurred on the same day), he was a loyal, strong support through the difficulties of the early post-war years, and his wide experience of mental and allied diseases was invaluable in solving many clinical and administrative problems. By his colleagues, medical and lay, he was beloved. An endearing trait was an absent-mindedness which lost him countless umbrellas, and once, it is said, while visiting an office at Northampton he suddenly remembered it was Southampton to which he had set out.

For health reasons, fortunately temporary, he retired from the Ministry after only six years' service; but, though the loss was great, his influence remained. During the late war he returned as a specialist on medical boards; as keen, as energetic, as courteous as ever, bearing heavy domestic anxieties and sorrows with a smiling fortitude.

JOHN WOOD, M.B., Ch.B., D.T.M.

The sudden, unexpected death of Dr. John Wood of Bournemouth has brought much sorrow to all who knew him as physician and friend. Born in Aberdeen in 1890, he was educated at Gordon's College there, afterwards at the University, where in 1912 he graduated in medicine. From the first his intention had been to educate himself for work in the foreign mission field. With this end in view, immediately on qualifying he became house-surgeon at the Worcester Royal Infirmary; later he proceeded to take the D.T.M. at Liverpool (1915) in preparation for medical missionary work under the aegis of the Church of Scotland. After ordination he was directed to Calabar, Southern Nigeria, West Africa, for duty and in charge of the Mary Slessor Hospital at Ztu on the Cross River and of eleven widely scattered mission stations based on the hospital. After some time there he was transferred to a newly built hospital and mission station at Uburu, where he continued to do valuable pioneer work. Being young, keen, active, and conscientious, John Wood speedily mastered the local dialects and made his work indispensable; he was held in high esteem by the natives among whom he ministered. In the end his health and his wife's health suffered so severely by reason of the death-dealing environment in which they lived and worked, and by the poor sustenance that the country afforded, that both were ordered home for good.

John Wood, on his return, settled in practice at Wigan, being appointed assistant surgeon to Wigan Royal Infirmary and medical officer and vaccinator to Wigan Union. After five strenuous years, for health reasons, he relinquished practice there and settled in Bournemouth, where he continued to live and work for his remaining years; by his gentleness, his sympathetic kindness, and his conscientiousness endearing himself to all who came into contact with him. It was the divine side in John Wood that brought him of his own free will to sacrifice himself for others by accepting missionary work, and in the parasite-infested wilds of West Africa. In all he did he seemed to be guided by an abiding faith to support in him a matchless fortitude and determination in a nature both kind and gentle. Constantly, in all manner of ways, he strove to do good and to help and encourage others, with never a thought of self. There were in him all the fine qualities of the stock from which he came: all the virtues went to build in him that nobility of character we knew to be his. Near the surface, often breaking out unexpectedly, lay a pawky, dry humour that was characteristically Scottish. He possessed the quiet, tranquil mind along with a becoming humility, owning all the attractive attributes with which Newman endowed the true gentleman. Of all men, John Wood could claim to say, "I have fought the good fight, I have finished the course, I have kept the faith." Much sympathy will be felt for his widow and five children in their grievous loss. S. W. S.

We regret to announce that Dr. Robert Edward Burnet Yelf, formerly of Moreton-in-Marsh, Gloucestershire, died in hospital at Chichester on Sept. 25. Born at Moreton on May 12, 1866, the son of a medical man, he was educated at Chipping Campden Grammar School and the University of Edinburgh, where he graduated M.B., C.M. in 1888. Dr. Yelf was for many years surgeon to the Moreton Cottage Hospital and district M.O. for the Shipston-on-Stour Union, and M.O.H. for Stow-on-the-Wold Rural District Council. During part of the war of 1914–18 he served as temporary lieutenant, R.A.M.C. He joined the B.M.A. immediately after graduation, was chairman of the Oxford Division and president of the Oxford and Reading Branch in 1908, and was made an Associate Member of the Oxford Division in 1931 when he left Moreton-in-Marsh to live at Selsey. In Moreton and for a wide radius around he had identified himself with every aspect of local life. On his departure a presentation, subscribed to by 730 people, was made to Dr. and Mrs. Yelf to mark the affection and esteem in which they were held. His father, whom he joined in practice in 1888 and succeeded in 1895, was one of the founders of the cottage hospital. In his younger days Dr. R. E. B. Yelf was a keen sportsman and captain of the local cricket and football teams. He had been for many years honorary secretary of the Moreton working men's club, chairman of the parish council, and at one time captain of the fire brigade. After leaving the Cotswolds for Selsey he became an active member of the bowling and tennis club, and did much to maintain the greens and courts when the regular staff were away. During the war, though retired from active practice, Dr. Yelf took on a great deal of medical work once more in order to replace the younger medical men who had joined the Forces, and up to the time of the short illness which preceded his death he was working in the village among his numerous patients, with a cheery smile and a word for everyone he passed on the road.

The Services

Surg. Capt. F. L. Cassidi, V.D., R.N.V.R., has been appointed an Honorary Surgeon to the King.

Surg. Cmdrs. E. C. Johnson, A. L. Gunn, and G. P. McCullagh have been awarded the R.N.V.R. Officers' Decoration.

Acting Group Capt. Sir Louis L. Greig, K.B.E., C.V.O., R.A.F., has been appointed an Officer of the Legion of Merit by the President of the U.S.A.

Acting Surg. Lieut.-Cmdr. J. S. Guest, R.A.N.R., has been appointed O.B.E. (Military Division) for great skill and devotion to duty as Principal Medical Officer of H.M.A.S. *Westralia* during the landing on Tarakan Island on May 1.

Surg. Lieut.-Cmdr. W. H. Milroy, R.A.N.R., has been mentioned in dispatches for skilful organization and for courage and devotion to duty in the operations covering the assault landing of 2/48th Assault Battalion, 9th Australian Division, at Tarakan on May 1, while serving in one of H.M. Australian ships.

The following appointments, awards, and mentions in dispatches have been announced in recognition of gallant and distinguished services in the field:

M.B.E. (Military Division).—Lieut.-Col. (Acting) W. E. A. Buchanan, T.D., Lieut.-Col. (Temp.) J. C. Mackay, M.C., T.D., Major W. L. Kinnear, and Major (Acting) J. D. Finlayson, R.A.M.C.

M.C.—Capt. J. Burns and Lieuts. R. Mackay, D. J. Macrae, F. W. M. Plant, and G. E. Stoker, R.A.M.C.

Mentioned in Dispatches.—Major (Temp.) C. H. Imrie, Capt. J. Morrissey (killed in action), Capt. (Temp.) A. Taylor-Smith, and Lieut. G. H. Darke, R.A.M.C.

Freed in the Far East.—Lieut.-Cols. H. C. Benson and C. W. Maisey, Major P. B. Hanbury, Capts. A. Barber, G. Blair, A. W. Frankland, D. W. F. Gotla, and V. W. J. Hetreed; R.A.M.C.; Major S. C. Colbeck, I.M.S.; Surg. Lieut. D. R. Syred, R.N.V.R.; Fl. Lieut. R. F. Braithwaite, R.A.F.V.R.

Repatriated.—Col. Julian Taylor, A.M.S.

CASUALTIES IN THE MEDICAL SERVICES

Killed.—Capt. Jacob Hyman Joseph, R.A.M.C.

Died.—Major Campbell William Kidson and War Subs. Capt. Denis John Burgess, R.A.M.C.

Died at sea while on active service.—Major Vivian Roy Clifton, R.A.M.C.

Wounded.—War Subs. Capts. J. G. A. Gilruth and J. A. Perpoli, M.C., and Temp. Lieut.-Col. J. M. Scott, R.A.M.C.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

The *Cambridge University Reporter* dated Oct. 9 contains a copy of the letter from the Home Office informing the Vice-Chancellor that the King by Letters Patent under the Great Seal bearing date Sept. 1 appointed Sir Lionel E. H. Whitby, C.V.O., M.D., F.R.C.P., to be Regius Professor of Physic in the University. The *Reporter* also prints the full text of the address to the Senate given in Congregation on Oct. 1 by Dr. T. S. Hele, Master of Emmanuel College, on resigning the office of Vice-Chancellor. Speaking of medical events of the past year Dr. Hele recalled that through the kind offices of the Medical Research Council a Chair of Experimental Medicine had been established for Dr. R. A. McCance, whose department is receiving further assistance from the same source. Addenbrooke's Hospital and the University were collaborating closely in the development of the School of Clinical Research. In the Shire Hall under Dr. Robert Ellis, chairman of the Cambridgeshire County Council, the future of the medical services of the area had been discussed by representatives of local authorities and hospitals, with representatives of the University present on these occasions. For the next five years the difficulties arising out of the enforced use of temporary and inadequate accommodation for the hospital services of the area would delay the full development of the School and of the ancillary services which the University would help to provide for the maintenance of health and for the diagnosis and treatment of disease. "Our guests—should I say paying guests?—from other Universities with one exception have departed, taking with them our very best wishes for the re-establishment of their work at home, and with grateful acknowledgment of the mutual help and inspiration which their presence in Cambridge during six critical years has engendered. St. Bartholomew's Hospital Medical School will return to their premises in Charterhouse Square when sufficient repairs have been completed."

Titles of the degrees of M.B., B.Chir. were conferred by diploma during the months of July, August, and September, 1945, on J. S. Keilin and C. N. Smith, of Girton College, and on I. M. S. Chappel, P. J. Coope, M. E. P. Hele, L. A. Norris, H. M. Russell, J. Whitham, and G. B. Wrong, of Newnham College.

Names of candidates for the M.Chir. examination should be sent to the Registrary by Jan. 1, 1946; the examination begins on Feb. 19.

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

At a meeting of the Council, held on Oct. 6 in the College House, with the President, Mr. Eardley Holland, in the chair, the following were admitted to the Membership: T. S. M. Barnett, A. Buchan, Daphne W. C. Chun, Aileen M. Dickins, E. D. Y. Grasby, M. W. Hemans, Ursula M. Lister, Agnes M. D. Milne, Abd El-S. M. El-Minabbawy, K. Mitra, Joan P. Moignard, P. Raj, W. B. Shute, Beatrice M. Smyth, J. M. Thomson.

Medical Notes in Parliament

Industrial Injuries Insurance

Mr. James Griffiths moved the Second Reading of the National Insurance (Industrial Injuries) Bill. He said that of the four measures needed to give effect to the White Paper scheme for a comprehensive system of social insurance two had passed into law. The first set up the Ministry of National Insurance. The second was the Family Allowances Act. This Bill was far more involved than either. The fourth would be even more complicated than the third, the present Bill. The broad principles on which the scheme of industrial injuries insurance was based had been outlined in the White Paper on Social Insurance. In accordance with this the Bill was to make compensation for industrial injuries a part of the country's social services and to make these injuries a matter for settlement on the basis of fixed benefits to be paid for a fixed premium. The Bill would be the end of "compounding." All persons employed in Great Britain under any contract of service or apprenticeship would be insurable without any income limit. Certain other people were being brought in—for example, members of lifeboat crews, employees of any local or public authority, taxi drivers, and members of rescue and fire parties in mines and works. Seamen and other persons employed for the purpose of the vessel or of the cargo or of passengers on British and British-owned ships, and civilian airmen employed on British aircraft were covered. Criticisms of the present Acts on the ground that the onus of proof always rested on the worker had been met by addition of a proviso that, for the purposes of this Act, an accident arising in the course of an insured person's employment should be deemed, in the absence of evidence to the contrary, also to have arisen out of that employment.

Expounding the details of the Bill, Mr. Griffiths said that, where at the end of an injury benefit period an injured man still suffered from disablement which was likely to be permanent or was substantial, he would be assessed for pension. This would be awarded in proportion to his loss of health, strength, and power to enjoy life. It would be awarded irrespective of his earnings. The disabilities which were to be regarded as attracting a pension of 100% were to be prescribed later. If a pensioner had to enter hospital for further treatment on account of his injury he would, so long as he was in hospital, receive pension at the full 100% rate irrespective of his normal assessment, but subject to a reduction of 10s. a week in respect of home savings. To-day a man could not draw sickness benefit and workman's compensation for the same injury. The Government had decided to modify that. Under its scheme a pensioner who was unfit for work would be entitled to sickness benefit even when his unfitness was due to his injury, subject to the provision that, if his pension was at the 100% rate, sickness benefit would be at half rate until he had paid ten contributions since the date of his accident. All benefit rates were on an equality for both men and women. As this was a State system of insurance, claims would be decided by officers appointed by the Minister to be insurance officers. Independent local appeal tribunals would hear and decide appeals from the insurance officers' decisions. There would be a final appeal to a Commissioner who would be a legal expert appointed by the Crown. The Bill contained a provision for financial aid to be given to persons engaged on research into the causes and prevention of industrial accidents and disease and for the Minister himself to employ persons to carry out such research. There was also a provision enabling the Minister to provide artificial limbs and other appliances to pensioners either free or at

reduced rates. There was to be appointed an Industrial Injuries Advisory Council to which he would ask employers' and workers' organizations to nominate members. To the injured man the cash payments were not the most important thing. The most important thing was that he should be fitted for a new life. That was where the old system failed completely.

Debate on the Bill

Mr. Osbert Peake said one of the great merits of the new scheme was that by a new method of assessing disability it provided a firm basis of supplementary schemes. There must be a close link with the new health and hospital services of the Ministry of Health and with the rehabilitating and retraining services of the Ministry of Labour. Miss Bacon hoped the equipment provided would include invalid chairs and spinal carriages. The cost of these was beyond the capacity of injured workmen to pay. Mr. Clement Davies spoke of the conditions in the quarrying industry of North Wales in galleries where the candle would not remain alight when it was standing up. The men worked in such conditions of dust that they could not be seen by men within two yards of them. Yet that type of workman was outside the scope of the Workmen's Compensation Acts. He asked why the small employer who had only one employee was outside the scope of the Act. With a broader measure there would be no legal question but only a medical question, with the medical man saying that a person was fit or unfit and what assistance he would require to rehabilitate himself.

Mr. Clitherow said that he himself was a final-year medical student. He asked the Minister to insert words so that the Bill should include health workers who contracted tuberculosis through being directly in contact with tuberculous patients in the course of their normal duties, or within a reasonable time afterwards. He suggested this because of his own observations both as a medical student and as a member of the Liverpool City Council sitting on the Hospitals' Committee. Nurses and health workers and the medical profession themselves had a thorough medical examination before they started. At their first start they were far healthier than the average. He gave instances of medical students who had fallen ill with tuberculosis. His observations were that one in every fifty medical students went down with tuberculosis during the three years of clinical work. It was distressing to see the number of nurses whose names appeared before the Liverpool Corporation Hospitals' Committee as having gone down with colds, and eventually with tuberculosis. The committee paid them a full salary for about three months, half salary for a further three months, and then cast them off like an old glove. Counsel's opinion had been that tuberculosis was not an industrial disease. Even if a girl could prove that a patient with an active lesion coughed in her face, and that pulmonary tuberculosis could be attributed to it, that was deemed to be an accident. He hoped that in the Committee stage an amendment would be made to include these girls.

Dr. Stephen Taylor said the Bill got rid of the endless legal and medical wrangles which had wasted so much money, but it perpetuated the distinction between industrial injury and non-industrial injury and disease. He hoped the Minister would assure the House that all nurses would be covered in the Bill, particularly those working on private nursing. With every safeguard the nurse was liable to septic fingers, kidney infections, and septicaemia. Regular *x*-ray tests, Mantoux tests, and blood counts were not done. Admittedly, in good sanatoria the nurses were not more liable to tuberculosis than the rest of the community, but he was pretty sure that taking the nursing profession as a whole they were more liable. The ills of nursing were not in the Schedule of Industrial Diseases. In the past, trade unions had to waste their energy getting diseases scheduled when that energy should have been used in getting rid of the diseases. Research workers spent their time proving a connexion between the disease and the occupation instead of trying to get rid of the disease. The Bill gave the Minister power to promote and assist research into the causes, incidence, and methods of prevention of industrial disease. He hoped that to this the Minister would add research into the treatment of industrial accidents and diseases, because this treatment was still far from perfect. Good work had been done in this field by the Industrial Health Research Board. He trusted the Minister would use the Board and the Medical Research Council, and would strike out on his own in the research field. He must provide his research workers generously with field workers, clerical staff, and laboratory technicians. Mental disability made up a large part of industrial disability. He hoped the Minister would generously promote research into industrial psychiatry and on the measurement of fatigue, of accident-proneness, and so on, and that he would encourage the work of those psychiatrists who had been busy in the Army. They should help the industrial neurotics over their stiles.

Mr. David Williams spoke on silicosis and pneumoconiosis. This existed on a staggering scale in West Wales, where one colliery from Jan. 1 to Sept. 29, 1945, had lost 200 men—more than one in eight. Once a man was certified to be partially or totally disabled with these diseases he did not return to the mining industry, so that 20% disability in such cases caused greater hardship than 20% physical disability resulting from accident.

Dr. H. B. Morgan said that in some workshops new organic solvents were being used upon which practically no research had been made. In some of the finest factories in Great Britain solvents were in use which the workman was forced to inhale, and which in three months would give him anaemia, from which he would never recover. He asked whether it was true that in Wales and the North-West the number of cases awaiting decision by the Silicosis Boards were two years in arrears. Was it true that the Government was doing practically nothing to train doctors for those positions?

Reply for the Government

Mr. Lindgren, replying for the Government, said the Minister desired that the provision of artificial limbs and surgical appliances should include wheeled chairs, spinal carriages, and equipment necessary for sick-rooms and for the treatment of a patient whilst bed-ridden at home. Referring to the plea of Mr. Clitherow for the inclusion of nurses and health workers in regard to consumption and other diseases arising from their work in hospitals, Mr. Lindgren said there were great difficulties in making provision for health workers within workmen's compensation measures because of the incidence of the diseases with which these workers dealt, and because of lack of proof that diseases arose out of or in the course of their employment. The Minister would desire, if possible, to provide for the workers and would like to have discussions between the Ministry of Health, the Ministry of National Insurance, and those who could speak on behalf of persons engaged on such work to see whether it was possible to bring them in.

The debate was adjourned until Oct. 11, when after further discussion the Bill was read a second time and was sent to a Standing Committee.

Medical Officers in the B.L.A.

In a reply to Sir John Mellor Mr. Bevan agreed that in August the B.L.A. had one medical officer for 409 officers and other ranks compared with one general practitioner for 2,576 civilians in the United Kingdom. He added that the civilian position could be remedied only by acceleration in the rate at which doctors were released from the Services. The Government was urgently considering to what extent this was practicable.

Compensation for Medical Practices

Mr. York on Oct. 11 asked the Minister of Health to state the intentions of the Government in regard to compensation for medical practices if taken over under the National Health Service. He also pressed for a general statement in regard to medical practices, in order that demobilized doctors may decide whether to purchase practices.

Mr. Bevan said that he had this matter under immediate review. He was not yet ready to make any statement, but knew the urgency and would do so as soon as he could.

Experimental Health Centres

Mr. Dumpleton suggested on Oct. 11 that the Minister of Health, pending the establishment of a National Health Service, should initiate experimental health centres in suitable places.

Mr. Bevan did not think it would be practicable to make this provision in advance of the new legislation. He added he was pressing on rapidly with the preparation of the Health Services Bill, which would deal fully with the subject.

Working Conditions for Nurses

Mr. Dumpleton asked on Oct. 11 what steps the Minister of Health proposed to take to improve the bad working conditions and hours of nurses in hospitals and institutions.

Mr. Bevan did not accept the implication that bad working conditions for nurses in hospitals and institutions were general. Where they existed they were in large part due to the effects of the war. He was giving this matter most earnest consideration in consultation with Mr. Isaacs and with the bodies principally concerned. He hoped to make a full statement within the next few weeks.

Release of N. Ireland Doctors.—Dr. Little on Oct. 11 urged the Minister of Health, in view of the shortage of doctors in Northern Ireland, to release at the earliest moment doctors who volunteered their services for the duration of the war. Mr. Bevan replied that the question of the acceleration of the release of doctors from the Services is at present under urgent consideration.

Medical News

A meeting of the Medico-Legal Society will be held at 26, Portland Place, W., on Thursday, Oct. 25, at 8.15 p.m., when Dr. W. Norwood East will deliver his presidential address on "Society and the Criminal."

The programme for the annual meeting of the British Orthopaedic Association to be held at the Royal College of Surgeons, Lincoln's Inn Fields, on Oct. 26 and 27, includes the presidential address by Mr. St. J. D. Buxton on prevention of accident and limitation of injury, a symposium on some methods of treatment of simple extra-articular fractures of the femur, and a lecture and demonstration on clinical photography. The papers are as follows: Prof. T. P. McMurray, Thomas and his splint; Mr. C. H. Cullen, infection of gunshot wounds with actinomyces; Prof. H. J. Seddon, another island epidemic of poliomyelitis; Prof. J. Leveuf, primitive congenital subluxation of the hip; Mr. J. S. Batchelor, congenital dislocation of the hip; Mr. E. W. Bintcliffe, pollicization of the index finger for traumatic amputation of the thumb; Squad. Ldr. E. Somerville, air arthrography of the knee-joint; and Prof. H. Platt, the place of orthopaedics in medical education and in the regional hospital service. The Association will hold its annual dinner in the Hall of Lincoln's Inn on Friday, Oct. 26, at 7 p.m.

The annual general meeting of the London Association of the Medical Women's Federation will be held at B.M.A. House, Tavistock Square, W.C., on Friday, Oct. 26, at 8.30 p.m., when Dr. Beryl Harding will deliver her presidential address on "Relief Work in Greece."

The first meeting of European pharmacists since the war is being held in London next month on the invitation of the Pharmaceutical Society of Great Britain. The members of the Bureau of the Fédération Internationale Pharmaceutique who will attend are: Dr. E. Höst Madsen, Copenhagen, president; Mr. E. Saville Peck, M.A., Cambridge, vice-president; Prof. D. Van Os, Groningen, Holland, vice-president; Dr. T. Potjewijd, Winschoten, Holland, secretary; and M. C. Moyens, Brussels, assistant secretary.

Dr. Elsie Violet Crowe, F.R.C.S.Ed., has been released from internment in Japanese hands.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* only two diseases had totals that differed appreciably from the previous week's return—scarlet fever with 148 more notifications, and whooping-cough with 173 fewer.

A slight rise in the incidence of scarlet fever was fairly general throughout the country; the largest local rises were Yorkshire 33, and Lancashire 25. The drop in the incidence of whooping-cough was due to the experience of a few counties; the largest falls were London 38, Middlesex 34, Warwickshire 33. Although there were only 10 fewer notifications of diphtheria than in the preceding week, there were wide variations within the counties. There were fewer notifications in Lancashire by 28, and in Durham by 23, but the total for London, Middlesex, and Essex was 29 in excess of the previous week's, and reached the highest level recorded this year. The other notable increase in diphtheria was in Glamorganshire, 16.

There were 6 fewer notifications of dysentery. Relatively large local outbreaks were recorded in Dorset, Poole M.B. 18; Yorks North Riding, Middlesbrough C.B. 18; Somerset, Taunton R.D. 14. The other large returns were in London 52, Lancashire 30, Surrey 20, Essex 16, and in Suffolk 15.

In *Scotland* the chief feature of the returns was a decrease of 33 in the incidence of dysentery; this fall was general except in Glasgow, where there was a slight rise from 55 to 57. The only change in the trends of diphtheria was a rise of 7 in Glasgow.

In *Eire* the number of cases of diphtheria fell by 8, and that for whooping-cough by 26, while rises were recorded for scarlet fever 13, and measles 8. Notifications of enteritis and diarrhoea increased by 9 cases to 110, of which 84 were recorded in Dublin C.B.

In *Northern Ireland* there was a further small rise in the incidence of scarlet fever; 17 of the 42 cases were notified in Belfast C.B.

Week Ending October 6

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,683, whooping-cough 909, diphtheria 479, measles 367, acute pneumonia 377, cerebrospinal fever 38, acute poliomyelitis 29, dysentery 207, paratyphoid 11, typhoid 15.

No. 39

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Sept. 29.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1945 (a)	(b)	(c)	(d)	(e)	1944 (Corresponding Week) (a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	17	1	20	—	1	39	4	18	2	2
Deaths		—	1				—	—		
Diphtheria	486	37	133	63	15	545	14	159	90	29
Deaths	6	2	—	2	—	6	1	2	2	
Dysentery	264	52	99	1	1	351	28	145	—	—
Deaths				—	—				1	—
Encephalitis lethargica, acute	—	—	1	—	—	2	1	—	—	—
Deaths		—					—			
Erysipelas			34	10	5			40	7	5
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				110					69	
Deaths	75	6	25	17	4	63	1	24	14	6
Measles*	406	35	83	25	4	2,015	27	201	46	42
Deaths	—	—	1	—	—	—	—	—	—	—
Ophthalmia neonatorum	66	6	10	—	—	67	2	11	—	—
Deaths										
Paratyphoid fever	11	1	1 (B)	—	—	11	—	—	—	—
Deaths	—	—	—	—	—	1	—	—	—	—
Pneumonia, influenzal†	302	13	5	2	6	479	14	8	2	2
Deaths (from influenza)	8	—	1	—	—	9	1	2	1	—
Pneumonia, primary			146	12				216	20	
Deaths		11		6	4		15		7	5
Polio-encephalitis, acute	1	—				2	—			
Deaths							—			
Poliomyelitis, acute	40	5	1	7	2	20	1	6	4	1
Deaths		—					1			
Puerperal fever		5	15		—		2	15	—	—
Deaths							—			
Puerperal pyrexia‡	124	12	14	2	—	143	4	17	—	2
Deaths		—								
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	1,509	113	272	27	42	1,838	39	372	41	63
Deaths	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Typhoid fever	15	—	1	4	—	11	1	5	6	1
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Whooping-cough*	920	39	44	16	6	982	55	55	21	12
Deaths	5	1	—	—	—	8	3	2	2	—
Deaths (0–1 year)	343	37	67	34	14	316	26	55	36	13
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	3,761	558	510	163	93	3,895	467	537	209	84
Annual death rate (per 1,000 persons living)			11·6	10·5	§			12·3	13·6	§
Live births	6,530	835	818	454	239	6,332	430	923	395	286
Annual rate per 1,000 persons living			16·4	29·3	§			18·8	25·6	§
Stillbirths	203	19	27			182	14	32		
Rate per 1,000 total births (including stillborn)								24		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

§ Owing to movements of population, birth and death rates for Northern Ireland are still not available.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Aitiology Westcent, London.* ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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ANY QUESTIONS?

Gymnastics for Young Children

Q.—*At what age should a child undertake gymnastics at school? Is there any truth in the idea that this form of activity has a harmful effect on a young child?*

A.—Gymnastics—by which term should be understood systematic activities—adapted to the age and physical capabilities of the pupils concerned form an integral part of the physical education scheme in all types of schools. Gymnastics include free and informal movements—e.g., those of a game-like character—as well as a wide range of free-standing exercises, and exercises on selected apparatus, carried out in accordance with a predetermined pattern and designed to aid healthy growth and development. Educational gymnastics have nothing in common with the type of work performed on horizontal and parallel bars, and popularly referred to as "German gymnastics."

Gymnastics can be safely and beneficially taught to the youngest pupils, though in the early age groups they appropriately take the form largely of play movements, utilized and controlled in such a way as to add to the value and enjoyment of these movements, while at the same time training the body and mind to respond to external suggestions and stimuli. They thus lead up to the immediate and more accurate physical and mental response expected from older children. Moreover, the youngest pupils, under a suitably trained teacher, can derive pleasure and profit from such basal movements as hanging, swinging, and climbing on apparatus devised for the purpose.

Gymnastics, interpreted as described above, can have no harmful effect on young children; on the contrary, they can contribute powerfully, under competent direction, to health and happiness.

Putrefaction of Meat, Poultry, and Game

Q.—*Before the discovery of penicillin it was common knowledge that putrid cheese could be eaten with impunity. The same applies to putrid game, such as grouse and partridge, while ordinary meat or poultry could not be eaten in the same stage without danger. It has often struck me that there must be something inimical to ordinary putrefactive bacteria in the decomposition of game. What are the organisms concerned in the putrefaction of game? Has the question of its possible bactericidal or bacteriostatic effect ever been investigated?*

A.—The inquirer poses a question, but also makes statements which are not altogether accurate. Putrefaction is a complicated process due to the action of many bacteria, some of which are aerobic organisms, but the main activities are due to putrefactive anaerobes. None of these organisms is pathogenic to man, and there is no evidence that the consumption of food—whether it is meat, game, poultry, or cheese—in a state of early decomposition is harmful to man, provided no pathogenic organisms are present in addition. The putrefactive changes develop rather differently in the types of food mentioned, due partly to differences in composition, including their water content, but these changes are all of the same order and due to non-pathogenic bacteria. The suggestion made that meat is dangerous if it shows putrefactive changes is still widely believed on the basis of the old idea that food-poisoning is due to ptomaines, but the conception of ptomaine poisoning is completely exploded. (See *Journal*, Jan. 6, 1945, p. 32.)

It is true that meat which is showing even incipient decomposition changes is condemned, but this action is based on the fact that the animals which supply the meat are liable to be infected with *Salmonella* and other pathogenic bacteria associated with food-poisoning, and it is a reasonable assumption that if meat exhibits such changes it has been badly looked after and that, if pathogenic organisms were present, they would have opportunities to multiply and generally infect the meat. With game and poultry the risk is slight, but here again the *sale* of such food showing decomposition changes would not be permitted.

These considerations suggest no reason to suppose that there are any substances in game which are deterrent to bacterial growth, as all the facts are fully explainable on other grounds.

Capillary Naevus

Q.—*Is a capillary naevus due to some intra-uterine arrest of development, or is it a hereditary recessive Mendelian characteristic? If both parents have naevi, are the children likely to be free?*

A.—This is certainly not a recessive Mendelian characteristic. In fact the indications for any hereditary basis are very slight. On general principles it might be anticipated, perhaps, that a general tendency to the formation of such naevi was heritable; but it is likely that non-genetic accidents of development are much more important than any such hereditary tendency in determining the actual appearance of a port-wine mark. It has been noted that the naevus often has a segmental distribution, and it may be secondary to some abnormality of the nervous system. So far as present knowledge extends, it seems probable that the child of two affected parents would run little more risk of being similarly affected than any random unselected child in the general population.

Vitamin B in General Therapy

Q.—*Could you please give a concise account of the indications, and if possible the rationale, for vitamin B therapy, which seems to be prescribed for so many varied complaints? I am not including deficiency diseases.*

A.—Vitamins of the B group may be used rationally in treatment of conditions (as distinct from frank deficiency disease) which are known to be caused in human beings by deficiency of these vitamins. For example:

Vitamin B_1 (Aneurin).—Anorexia, constipation, tingling of hands and feet, aching muscles (especially calf muscles); changes of temperament (which may be called neurasthenic), bilateral neuritis, oedema and tachycardia without obvious cardiac lesions.

Niacine (Nicotinic Acid or Nicotinamide).—Diarrhoea, changes of temperament such as morbid anxiety or fear, stomatitis (including Vincent's infection).

Riboflavin.—Corneal vascularization. Wills has shown that a nutritional macrocytic anaemia is cured by crude liver extract or marmite, but not by the purified extrinsic or intrinsic factors, nor any of the known components of the B complex. Vitamins should be given whenever the diets used in treatment are likely to be deficient—for example, when febrile patients are given large doses of glucose.

These vitamins may be used to treat conditions which are considered to resemble those that occur in deficiencies in animals. Aneurin has been used in treatment of Wernicke's syndrome on the ground that haemorrhagic lesions in the basal ganglion and brain-stem occur in pigeons on a diet deficient in aneurin. However, Joliffe *et al.* reported a large series of cases of "nicotinic acid deficiency encephalopathy" which resembled Wernicke's syndrome in their clinical picture. Joliffe found that aneurin had no effect in these cases and that nicotinic acid caused rapid improvement.

Choline and vitamins of the B group protect animals against liver damage; hence choline and concentrates of the B group have been used in treatment of cirrhosis of the liver, and good results have been claimed. On the ground of its vasodilator action, nicotinic acid has been used in treatment of Ménière's syndrome.

There is no evidence that these vitamins will benefit patients with gastric ulcer if their diet is not inadequate. Their use for various neurological conditions is based on the belief that they have some general "protective" action on the nervous system.

Vitamins of the B group are employed extensively on the ground that they may do good and can do no harm. This may be justifiable; however, recent studies suggest that the administration of large doses of a single vitamin may provoke deficiency of another vitamin. If these vitamins are given, concentrates containing all the possible members should be used.

Variations in Pulse Rate

Q.—*A man aged 60, past history no serious illnesses other than two periods of low blood pressure which were corrected with rest and treatment. Present condition: heart clinically and electrocardiographically normal. B.P. 148/88. Pulse rate varies between 60 and 40 beats a minute. What is the reason for this, and what treatment might be tried?*

A.—Variations in the pulse rate between 40 and 60 a minute may be due to a high vagal tone—that is, presuming that the pulse rate is really the heart rate and that no beats occur at the heart which do not reach the pulse. The normal electrocardiogram has excluded complete heart-block. It is not clear whether the patient feels at his worst when the pulse is slow or quick. If vagal influence is to be got rid of, then full doses of atropine in some form should be made use of. If such variations in rate are the only abnormality

to be detected in the heart, then one need not restrict activity; probably exercise would improve the patient. It would be worth while knowing whether the blood pressure varied with the rate of the heart. It might be well to try full doses of strychnine, or some stimulant of the sympathetic such as ephedrine or amphetamine.

Treatment of Eclampsia

Q.—*What is the modern treatment of eclampsia, occurring before the onset of, and during, labour?*

A.—The modern treatment of eclampsia is based largely on the views of Stroganoff. It is believed that the danger of the condition depends on the number of fits, and that external stimuli are important in the causation of fits. The treatment, therefore, consists in placing the patient in a quiet, darkened room, reducing external stimuli to the minimum, and giving sedatives to lower the sensitivity of the central nervous system. Paraldehyde is preferred as a sedative in many clinics and is given per rectum in a dose of 6 drachms, repeated in 4 hours and again in 6 hours. If the patient is restless, morphine with atropine may be given in addition, but large doses of morphine should be avoided. Expectant treatment is advised in most cases of eclampsia occurring before labour, though pregnancy should be terminated within a day or two after the fits are controlled.

When eclampsia occurs during the course of labour the membrane should be ruptured when the cervix is half dilated. When the cervix is fully dilated forceps delivery should be employed. Any obstetric abnormality should receive the appropriate treatment. Caesarean section may occasionally be the treatment of choice, especially after the fits have been controlled in a case where the child is alive and viable. Caesarean section may also be needed in cases of severe eclampsia where medical treatment fails to control the fits.

The above is only an outline of the principle of the modern treatment of eclampsia. For a more detailed answer, and for special methods of treatment, the questioner is referred to *Antenatal and Postnatal Care*, by Prof. F. J. Browne (5th edition, Churchill, London, 1944, pp. 377 *et seq.*).

Pruritus and Glycosuria

Q.—*A woman of 33 has suffered from severe pruritus vulvae for over five years. In January and April, 1945, urine examination gave +++ result for sugar. Within the last six months she has lost about 10 lb., feels nervous and shaky, easily exhausted, and has great craving for sweets and bread. Urine now free; blood-sugar-tolerance curve: fasting 83 mg., half an hour after glucose 160 mg., 1½ hours after glucose 100 mg., two hours after glucose 87 mg. (capillary blood findings). Is it likely that an undue amount of sugar is present in the tissues of the vulva and gives rise to irritation? If so, should insulin be used in small doses to assist the synthesis of glycogen in liver and muscle and to reduce the amount of sugar in the tissues? The restriction of carbohydrates in the diet is difficult because of her craving for them and the loss of weight.*

A.—This question is difficult to answer satisfactorily and some further information is needed about the diet. The sugar tolerance is normal and consequently excludes the diagnosis of diabetes mellitus. It is possible that the present diet is very low in carbohydrate and that the patient has a mild diabetes which has recovered with dietetic treatment. If so the pruritus should have disappeared, and it does not seem likely that it is in any way connected with glycosuria. There is no evidence to suggest that there is any difference between the sugar content of the vulval tissues and that of the blood. If the diet contains less than 150 grammes of carbohydrate it should be increased to 200 or 250 grammes, as the patient is losing weight. If glycosuria returns and a high blood sugar is confirmed, insulin should be given in adequate amounts. It is suggested that another cause for the pruritus should be sought.

Tenderness of Muscles

Q.—*For more than three years a patient has suffered from tenderness of the voluntary muscles. At times the slightest pressure on a muscle gives intense pain. Sometimes there is aching, but usually there is pain only on pressure. A slight pinch produces agony. His general health is good. What might be the cause?*

A.—It is difficult to refer these symptoms to any recognizable lesion of the neuromuscular system. It is assumed that care has been taken to exclude peripheral neuritis and also occupational disease; puzzling symptoms are sometimes produced by chemicals used in industry. It is equally difficult to attribute the symptoms to neurasthenia, for, although they might be affiliated with the "rheumatism" and "fibrositis" of neurasthenia, the other symptoms of that disorder are apparently absent. The systematized pattern of the complaint suggests an underlying physical or biochemical abnormality. Biopsy of muscles is easily performed and might provide information of value in this patient. An *x*-ray examination of the muscles for parasites, calcification of ligaments, etc., might also be helpful. The blood chemistry should be investigated, particularly the blood sugar, serum calcium, and erythrocyte sedimentation rate. If none of these investigations gives a clue to the cause, symptomatic treatment with the vitamin B complex should be tried, including large doses of B_1. Wide-field irradiation with ultra-violet or infra-red rays might also give relief.

LETTERS, NOTES, ETC.

Venereology

Brigadier T. E. Osmond, Honorary Consultant in Venereology to the Army, writes: As I was mainly responsible for the introduction of the word "venereologist" into "Army medical jargon" I feel it incumbent on me to answer the letter of Lieut.-Col. Henry Richards (Sept. 22, p. 414). It must be admitted that the word is a hybrid, but "English contains thousands of hybrid words, of which the vast majority are unobjectionable" (Fowler: *Modern English Usage*, p. 241). In any case "venereologist" is preferable to "dermatologist," which it supplanted. But the difficulty lies deeper; the term "venereal disease" officially refers to syphilis, gonorrhoea, and soft chancre, yet many patients suffering from these diseases may be exculpated from "venery." For many years doctors have been searching for a more suitable word than "venereal" but without success. Parenthetically an "-ologist" is a person who makes a study of a subject but is not necessarily an "expert practitioner" in it. Criticism, to be of value, should be constructive: Col. Richards's seems to be destructive. Having forgotten much of the classics which I learned at school I consulted a friend who is an eminent classical scholar. He admitted that he found the problem difficult, but tentatively suggested "aedoeologist," from the Greek *αἰδοῖα*, or "aphrodisiologist" from *ἀφροδίσιος*; either word can mean pudenda. Admittedly neither word contains any reference to disease, but nor do ophthalmologist or laryngologist. It is to be feared that neither of the words suggested will prove acceptable, but can Col. Richards or any of your readers suggest a better?

Digestive Disorders and Swallowed Sputum

Dr. P. A. Galpin (Plaistow) writes: With reference to the question and answer on digestive disorders and swallowed sputum (Sept. 8, p. 341), from the reply given is one to assume that there is no risk to patients suffering from chronic sinusitis or bronchiectasis in swallowing muco-pus, and that one can trust the gastric secretions to deal with any infection? From my own experience I have noted many children suffering from post-nasal catarrh, who have not learned to spit, frequently have nausea or abdominal pain. In my opinion this has been due to swallowing muco-pus, and I have therefore endeavoured to persuade the parents to train the children to avoid swallowing muco-pus—in other words, to learn to spit. Two or three questions come to one's mind. Which is the factor in gastric secretion which has bactericidal properties? Is it hydrochloric acid? If this is so then patients with hypochlorhydria are at a definite disadvantage, and it would seem to me that patients debilitated after acute catarrhal conditions following measles or whooping-cough may be producing gastric juice deficient in bactericidal power. The surgeon has great faith in the bactericidal power of the peritoneum, but he does not willingly allow abscesses, whether acute or chronic, to spill over in the peritoneum.

Neutralizing Gastric HCl

Mr. E. H. Johnson and Mr. J. Duncan write: The treatment of peptic ulcer as described in your "Any Questions?" page of your issue of Sept. 1 mentions the importance of maintaining a stomach acidity in the region of *p*H 3.5 in order to promote healing of the ulcer by the inactivation of the pepsin. The maintenance of this continued neutrality can be accomplished by adequate dosage of aluminium hydroxide. Aluminium hydroxide alone of the common antacids possesses the property of neutralizing the gastric hydrochloric acid to a maximum *p*H of 3.5 to 4.0; excess dosage after the initial neutralization serves to maintain this favourable condition by the neutralization of further secretion. This important property of aluminium hydroxide was indicated in a recent paper upon the "Chemical Testing of Antacids" given by us at the British Pharmaceutical Conference held on July 18, 1945.

Early Treatment of Bell's Palsy

Dr. J. L. Thomas (Brynmawr) writes: The article by Mr. H. P. and Dr. Cecily Pickerill on the above subject (Oct. 6, p. 457) recalls with interest that, about fifty years ago, while in colliery practice in Glamorganshire, I had a case of Bell's palsy (catarrhal) in a young miner who was a promising public singer. While assiduously, but ineffectively, treating the case electrically, by good fortune I read of Robert Jones—always a friend of weak muscles—using in such a case mechanical means to draw the sound side of the face towards the paralysed one. I resolved to imitate his treatment by using strips of plaster, and after one month the result was highly successful—and very cheering.

Corrigendum

By a slip of the pen the title of Wing. Cmdr. Kenneth Bergin's letter (Oct. 13, p. 508) was made to refer to the Army; the heading should have read: "Psychiatry in the R.A.F."